

Chapter VIII: Catalogue d'Oiseaux

Catalogue d'Oiseaux (1956-1958)

The year 1958 brings the epic work for solo piano, *Catalogue d'Oiseaux*, the complete performance of which lasts just under three hours. This seminal work comprises thirteen pieces, set in seven volumes, forming a symmetrical (arch-shaped) design¹:

Book 1

- I Le Chocard des Alpes (alpine chough)
- II Le Loriot (golden oriole)
- III Le Merle Bleu (blue rock thrush)

Book 2

- IV Le Traquet Stapazin (black-eared wheatear)

Book 3

- V La Chouette Hulotte (tawny owl)
- VI L'Alouette Lulu (wood lark)

Book 4

- VII La Rousserolle Effarvate (reed warbler)

Book 5

- VIII L'Alouette Calandrelle (short-toed lark)
- IX La Bouscarle (Cetti's warbler)

Book 6

- X Le Merle de Roche (rock thrush)

Book 7

- XI La Buse Variable (buzzard)
- XII Le Traquet Rieur (black wheatear)
- XIII Le Courlis Cendré (curlew)

The central, pivotal Book 4 is devoted to the longest piece which depicts the songs of the reed warbler and its surrounding domain. Indeed, Books 2 and 6 also portray but one principal bird and its immediate environment. The palindromic structure of the books is thus: 3-1-2-1-2-1-3. In terms of the number of pieces in each book, the structure is palindromic; indeed, throughout his music, Messiaen was fascinated with mirrored arrangements - nonretrogradable rhythms, for example.

Each piece depicts a principal bird, surrounding habitat and songsters from a specific region of France. A verbal description is included as a preface to every piece, while a description of the principal bird's environment, and the other birds associated with it, is also given. However, the many artistic reconstructions of habitat are not the only non-birdsong material to be utilised throughout the work. Messiaen includes frequent sound-colour associations and elaborate programmatic descriptions which are all written into the score; in addition, many of his previous compositional procedures, such as the earlier modes of limited transposition and the experimental quasi-serial techniques, are also employed. *Catalogue d'Oiseaux* is a compendium of numerous techniques, materials and birdsong. In his dissertation, Shu-Wen Sun divides these aspects into three chronological categories. The following categorisation is derived from both Philips' and Sun's approaches:

(1) 'Technique' Material²

- a) modes of limited transposition
- b) Greek and Hindu rhythms³
- c) characteristic harmonies from early period
- d) use of Turangalila motives

(2) 'Experimental Period' Material

- a) quasi-serial treatment: modes of pitch, rhythm and dynamics⁴ (as in *Mode de Valeurs..*)
- b) twelve-tone modes (appearing in any sequence or permutation)

(3) Birdsong

- a) varied species (77 different songsters)
- b) using full gamut of complex sonorities available on the pianoforte
- c) hybrid, polyphonic and many one-voice-dominant textures

(4) Innovations

- a) use of chordal-complexes (not belonging to Messiaen's modes)
- b) attempts to depict bird habitats, animals, human perceptions
- c) experimental use of pedal markings
- d) hybrid textures using both inferior and superior resonance effects
- e) homorhythm and homophony (one voice or part dominant)
- f) quasi-glissando effects
- g) polyphony on piano

It is important to understand that Johnson's classifications and insight remain authoritative and comprehensive sources for the study of *Catalogue d'Oiseaux*, an issue to which he devotes an entire chapter. However, it is, as before, imperative to build on these past discoveries.

Further, Johnson has subdivided Messiaen's use of rhythm and pitch in non-birdsong material into five groups: these features are accommodated within the above new categorisation.

It is essential to include the use of 'invented' Greek and Hindu rhythms, although often they are hard to detect. Additionally, the above categorisation (an adaptation of Sun's) mentions the traditional Messiaenic harmonies. In many pieces, Messiaen employs traditional triadic chords along with one or two added chromatic inflections. The opening two chords of 'Le Loriot', for example, are F# major (with an added minor 7th) and E major. Similarly, the hybrid opening textures of 'L'Alouette Calandrelle' are set up by F# major chords and followed by two-voiced homophonic (lower voice dominant) cries from the short-toed lark. Messiaen cleverly juxtaposes non-birdsong material with birdsong. The 'modal' chordal complexes of 'la nuit', at the beginning and end of L'Alouette Lulu are interspersed with the insistently repeated calls of the wood lark, the principal bird. A superimposition of non-birdsong on birdsong is not found in *Catalogue*, but polyphonic counterpoints between birds are numerous. Non-birdsong and birdsong material remain

distinct from one another in rhythm, dynamic, pitch and intervallic content, texturally and with the varying use of tempi.

It is not only Messiaen's subdivision of the work into books that gives it a graspable symmetry and form: each individual piece is carefully organised by the composer. The form of most pieces includes either a refrain, which alternates with other material, or a palindromic structure. In many cases, the form is dictated by the unfolding of night and day: once again, Messiaen disregards traditional formal organisation. Often, like a painter, the composer's synaesthetic imagery manifests itself in the symbolism of colours and the change in the time of day. Owing to the fact that birds often sing at four o'clock in the morning, it is inevitable that Messiaen frequently depicts night time.

‘As to the form, there is nothing left of the traditional. Excepting a reminder of the Greek triad (Strophe, Antistrophe, Epode) with interpolated couplets, in the “Chocard des Alpes”, and excepting the singing phrase harmonised by coloured chords of mode 3 which unfolds slowly as the river, in the “Bascarle”....’⁵

Where an entire day is depicted, the form is more easily determined: ‘La Rousserolle Effarvate’, for example, depicts, in a Circadian fashion akin to *Réveil des Oiseaux*, a period of twenty-seven hours from midnight to three a.m. the next day, in a piece of half an hour. However, every piece has its own distinct form, unmistakably defined by different blocks of material. These blocks of material, which range in length from one bar to several

pages, are programmatic in that they portray highly specific subjects - a natural habitat, a birdsong or songs, an animal or a subjective impression of nature.

Harmony is extremely useful in seeking to represent the timbre of a bird vocalisation.

Harmony also can create a number of different 'illusions': For example, the tawny owl's cry (in 'La Chouette Hulotte') not only has meticulously marked chordal complexities and a sudden diminuendo normally using 'resonance contractée'-type chords, but also gives, as described by Peter Hill (1995), an illusion of a glissando with the minor third C-A and accompanying chromaticism⁶. Other quasi-glissando effects are created by fluid runs. In 'Rousserolle Effarvate' (reed warbler), this principal bird is depicted, on one occasion, by a rapid group of slurred hemidemisemiquavers which interchange white and black notes. Of course, both listener and performer must imagine the speed being three or four times as quick: as the composer advises, the glissando is like that of a harp [ex VIII/1 - 'La Rousserolle Effarvate', p33].

There are several occurrences of non-birdsong material that are influenced by the 'experimental period'. The opening of 'La Chouette Hulotte' embodies an integration (or 'mode') of pitch, duration and dynamics: in other words, each note is allocated a specific dynamic and duration. The A natural above middle C is given the duration one demisemiquaver, and each note, progressively down to the bottom A natural on the piano, is given a duration one demisemiquaver longer than its predecessor - that is to say, the last note has a duration equivalent to forty-nine demisemiquavers. The dynamics, too, are

arranged in a palindromic continuum: the A natural is given a fff marking, D# is given ppp, while the next A natural down is once again fff. This is shown below:

A (fff)
 G# (ff)
 G (f)
 F# (mf)
 F (p)
 E (pp)
 D# (ppp)
 D (pp)
 C# (p)
 C (mf)
 B (f)
 Bb (ff)
 A (fff)

Messiaen excludes the marking 'mp' from the list in order to formulate the seven gradations of dynamic level: 1) ppp, 2) pp 3) p 4) mf 5) f 6) ff 7) fff.

Johnson has also codified birdsong into four specific categories⁷. The reason for this is, first, to create appropriate tabular forms that display the group structure, showing the different types of texture, timbre, tonalities and bird-group relationships and, secondly, the overall formal structure displaying the association between birds and their natural environment.

Each of the thirteen pieces is innovative in its own way: this chapter investigates *Catalogue d'Oiseaux* and its forward-looking birdsong treatment.

The first piece, 'Le Chocard des Alpes', is set, as is 'La Buse Variable' (no. 11), in the mountains of Dauphiny. The form revolves around three substantial sections that represent three distinct mountainous scenes. Messiaen defines these divisions, as in the ensuing orchestral work *Chronochromie*, as 'strophe', 'antistrophe', and 'epode'. They are separated by 'verses' that depict the cries and flights of the principal bird, as well as the often raucous and ferocious rumblings of the raven, together with material representing copious other flights of birds. A plan of this tripartite form is displayed below:

Strophe	The ascent toward the Meidje glacier: 'grim and massive'
Verse	<ul style="list-style-type: none"> (1) Cries of choughs and raven (2) Flights of birds <ul style="list-style-type: none"> (i) alpine chough crossing the abyss (ii) majestic flight of golden eagle⁸ (iii) 'sparkling' flight of choughs (iv) motionless mysterious ascent (v) acrobatic flights of choughs above chasm
Antistrophe	The fallen logs around the warren of Saint Christophe: enormous and powerful.
Verse	<ul style="list-style-type: none"> (1) Cries of choughs (2) Flight of birds

	<p>(i) alpine chough surveys the landscape while skimming over abyss</p> <p>(ii) majestic flight of golden eagle</p> <p>(iii) motionless and mysterious ascent</p> <p>(iv) flight of choughs</p> <p>(v) two choughs in the sky</p> <p>(vi) acrobatic flight of choughs above chasm</p>
Epode	Mystical stone circle of Bonne-Pierre: 'gigantic and supernatural'

There is no feeling of line or development. Long silences break up blocks of music: each short section illustrates either a bird vocalisation or a flight-scene, and there is no superimposition of the two. The alpine chough's calls are greatly enriched with colourful invented harmonies: its first cries, in verse 1, contain (1) three perfect fifths with elaborate harmony, and (2) ascending and descending semitones in both parallel and contrary motion, thus creating a quasi-glissando effect in an anapaestic rhythm [ex VIII/2 - 'Le Chocard des Alpes', p2, s3, b4 & p2, s4, b1]. With the exception of the alternator (p8), the 'brilliant'/'sparkling', equally emphasised two-part homophonic 'vol des chocards' (p9) and the polyphonic 'vol acrobatique des chocards au dessus de l'abîme' (p10), each note of the alpine chough is depicted with an invented harmony. A particularly poignant effect is produced in the second verse (p6) as the alpine chough 'surveys the landscape while skimming over the abyss'. His 'tragic' cries are created by a stilted bacchius metre, used for the first time.

The second piece, 'Le Lorient', is set in the early hours of the morning in the district of Charente. The opening of the piece suggests the first tentative bird calls of the morning. Each bar is separated from the next: the music, in addition, has a calm serenity which is set up by the opening pair of dominant seventh chords, where each voice moves up a whole note in parallel. The following 'gilded'⁹ call of the principal bird, the golden oriole, employs high resonances, forming a hybrid texture: its superior resonance is built from homorhythmic demisemiquavers with the left hand dominant [ex VIII/3]. Incidentally, this call is based around Messiaen's mode 2, predominantly in E major. Each emergence of the principal bird is written in the same homorhythmic (one part dominant) style, with or without the preceding chords. The only exception to this is found in the 'Lent' section which represents the 'memory of gold' and the 'rainbow in the sky' (b115) [ex VIII/4 - p9, s5, b1-2], where three staves are used: the top two establish a chordal effect with the second part being dominant; however, the bass part (stave 3) adds block chords reminiscent of the third movement from *Cinq Rechants*. The two opening chords of the whole piece are later extended to form chordal modulations, interspersed between fluttering complex counterpoints from two garden warblers and eventually, at the 'Lent' section of bar 100, concluding with a richly resonant E major chord, representing the full sun of midday.

A beautiful quasi-glissando effect is produced by the robin's rapidly descending semiquavers in a 'tendre, confiant' ('tender', 'confiding') two-voiced homophonic texture: the right hand uses black notes and the left has white [ex VIII/5a - p2, bar13]. The

'incantatory' song of the song thrush also employs this effect in an ascending order in its later, comparatively vigorous appearance; although, white and black notes are not exclusively confined to one hand [ex VIII/5b - bar 123].

There are three brisk, assertive polyphonic duets between two loquacious garden warblers, where the first is consistently given the higher notes. The second duet blurs this contrast, while the third, although still predominantly keeping the top part in a higher range, overlaps to a still greater extent while adding occasional accents.¹⁰ A 'crossed hands' technique is often required in this more substantial third counterpoint section: additionally, more reference notes and repetitions of rhythmic motives are incorporated in both parts [ex VIII/6 - p6].

'Le Lorient' is saturated with precise pedal markings producing often expressive nuances or unique timbral qualities, where the tone colour is dramatically changed: often, two or three simultaneous groups of notes may carry a distinctive dampened sound, while others are left sustained. In the score, the blackbird's song, for instance, includes the indications 'sans sourd.'/'without mute' (left pedal), 'avec 2nd péd'/'with left pedal' and 'péd III sempre'/'continuous [use of] middle pedal'. The specific use of soft and middle pedals produces clarity of the upper pitches: each note is delivered with the desired 'sparkling', 'muffled' or 'muted' effects. In the sections which involve strict harmonic modulation, at bar 100 for example, a right pedal marking is scrupulously given to each chord, creating an added resonance and full sound throughout. Birds' vocalisations, environments and flights are significantly coloured by these technical instructions, such as (1) 'sourd.' (muted, left

pedal), (2) 'sans sourd.' (without mute, left pedal), (3) 'ped.' (right pedal), (4) 'ped. sempre' (continuous right pedal), (5) '+ ped. III' (plus middle 'sostenuto' pedal), (6) 'avec 2nd péd.' (with the 'soft' pedal), (7) 'mettre très peu de pedale' (use very little right pedal). These markings add another dimension to the sonorities produced by this versatile instrument.

The piece ends with the opening call of the golden oriole, but in this instance without the resonance effects created by a preceding chord.

Set in the Roussillon district on the southern coast, the third piece, 'Le Merle Bleu', presents the seemingly gentle blue sea in a number of contrasting moods, including terrifying waves and 'rough' cliffs, interspersed with (for example) the high-pitched, strident calls of swifts. The many depictions of birdsong are often quite sharply set against 'mood' sections which are somewhat ambiguously characterised - 'the resonance of rock faces', 'luminous, iridescent, blue halo'. At the same time, Messiaen establishes links between sections - effectively connecting landscape, human perception and birdsong - by his frequent treatment of superior and inferior resonances. Thus the intrinsic quality of a particular bird's vocalisation is enhanced. For example, the lower accented Bb in the bass (bar 2) reverberates a huge 'boom of the surf' and suddenly homogenises with the high-pitched cries of the swifts. These swifts are always represented in the top range of the piano's register and in chordal style: most occurrences include various tritones and major 7th/diminished octave intervals [ex VIII/7 - p1].

Water is represented in several guises. Its second appearance (bars 18-19) is written in equally emphasised two-voiced homophony: liquidity is suggested by the demisemiquavers, and a muffled quality by its low bass register. The effect of water droplets is then created by grace notes, and quickly followed by a descending bass flourish [ex VIII/8a - bars 18-22]. A further appearance of water is entitled 'clapotis de l'eau'/'lapping of water': in four short bars, the form is thus:

ascending flourish - droplet - descending flourish - droplets [ex VIII/8b - b55-58]

These bars are immediately followed by a section entitled 'la mer bleue', depicting the horizon of 'the blue sea': based on Messiaen's mode 2, these exquisitely harmonious episodes, according to the composer, complement the satin texture and purple-blue, slate and blue-black shades of the blue rock thrush's plumage [ex VIII/8c - p5, b59-63]. These sensitive and contemplative harmonies present an unusual stillness before, and after, other more tumultuous versions of the sea that dominate the rest of the non-birdsong material in this piece. For example, the waves (bars 68-70) are represented by flourishes in the bass and short rapid cells of chords [ex VIII/9a, b]. A later version of the waves displays a low A natural trill which rumbles in the distance to pianissimo [ex VIII/9c]. A further example of a very deep bass resonance can be located before the last appearance of 'the blue sea', where a thundering *ffff* dynamic is left to die away. This dramatic forcefulness is pre-empted by a pulsating, chordal representation of waves, where striking invented harmonies, like tam-tams, are followed by obtrusive inferior resonance sonorities, while

the immediately preceding forte chords represent the ‘huge resonances of rock faces’ (p22).

The specific subject of the piece, of course, is the blue rock thrush: Messiaen’s depiction of water is directly related to this bird’s environment - he says in his introduction to ‘Le Merle Bleu’ that ‘its song blends with the sound of the waves’. The bird’s distinctive character is, like the swifts’, represented homorhythmically, with the exception that grace notes are occasionally included. Its uniqueness becomes immediately apparent when the bass resonance sets up two-, or sometimes three- or four-voiced chordal effects. At bar 84 (p7), the blue rock thrush’s song is built around the perfect fourth: each semiquaver pattern is interspersed with either one or two quaver chords [b84]. In this particular example, two ionic minor metres are employed (UU--). The pedal marking creates some extraordinary resonances with the accompanying bass chords. Indeed, the blue rock thrush’s vocalisations are, in the entire movement, often complemented by bass sonorities, representing the echo given off by rock faces overlooking the blue sea, and saturated with the perfect fourth interval, giving both a natural openness to the overall timbre and a feeling of quartal harmony. In addition, the sonorous ‘halo’ is achieved by rapid demisemiquavers, forming the ensuing bell-like resonance in the blue rock thrush’s vocalisation - 4, cretic, 2 (bars 31-36). In this way, radiant, iridescent timbres are typically produced, most of which are associated with the colour blue.

The importance of the blue rock thrush is, arguably, matched by the emphasis placed on water - with, for example, whole sections devoted to ‘the blue sea’ - but the supporting

rôles played by the herring gull and the theckla larks should not be overlooked. Whereas the blue rock thrush sings alone, the pair of 'chirruping' theckla larks enable Messiaen to write contrapuntally. The motion of these sections is continuous: if one part has a long duration or trill, the other maintains momentum through rapid groups of notes. Short, repeated cells occur regularly in this 'wild dance', as Peter Hill describes it, where the 'Balinese inspiration mirrors the pentatonic flavour of the first solo.'¹¹

Throughout the piece, each birdsong or non-birdsong feature appears in blocks, and each of these features appears more than once. These discrete, repeated motives enable the listener to recognise the components of the piece, thus enhancing the sense of formal structure. The music concludes with the 'memory of the blue rock thrush', the final F# minor chord hinting at an A major tonality.

'Le Traquet Stapazin', a substantial piece, is also set in the Roussillon region of the Mediterranean coast near the Spanish border. However, here the scene is taken from the mainland side, depicting terraced vineyards, cork-tree forests and mountains. The form is achieved through a circadian time-scale representing the period from sunrise to sunset. The piece opens with four widely-spaced chords, followed by a bottom E natural, then a chord and a superior resonance in the form of an iamb. The sombre harmonies - representing terraced vineyards - are interspersed with short bars of various bird vocalisations, including the black-eared wheatear, spectacled warbler and Ortolan bunting. The form of the piece may be divided into several sections which are defined by verses representing the sun in different positions. These sonorously majestic sequences

incorporate both superior and inferior resonance effects. Each verse is arranged in four staves; the first two are interrupted by short snatches of birdsong, and all are followed by longer passages made up of several bird vocalisations. The table below sets out Messiaen's characterisations of each verse.

Verse 1 (p8)	'the red and gold disc of the sun leaves the sea and climbs into the sky' other markings - majestic, resonant, colourful - resonate all notes
Verse 2 (p12)	<u>FULL SUN</u> 'the golden disc of the sun climbs higher into the sky - luminous band on the sea' other markings - as before
Verse 3 (p22)	'surrounded by a deep red and gold, the sun goes down behind the mountain' other markings - as before¹²

All these verses are built upon resonance effects and display a range of beautiful colours in the static harmony. The bird calls, especially in the case of the black-eared wheatear, introduce variety in colouration and a more rapid tempo to this section marked 'Lent', with its grand texture [p12].

The first section introduces the songs and calls of all the birds to be heard in the piece. These bird vocalisations are brief and are either broken up by interpretations of landscape, such as the 'terraced vines', or appear concurrently, as in the section where the raven is

depicted 'on the rocks of the cliff' [p1]. Both the spectacled warbler and the goldfinch are written mostly in a single-line texture: it is for that reason that they are accompanied by a chord in the left hand. By contrast, the 'proud and abrupt' homophonic demisemi-quavers of the black-eared wheatear and the 'cruel' and 'barking' repeated homorhythmic cries of the herring gull are sufficiently colourful without harmonic support. Sharp chords with accented grace notes and short flurries of descending chords in parallel suggest a sniggering, almost persecutory manner in the herring gull. Its short refrains are often in an anapaestic rhythm (p3). In addition, the raven (p3 and p6) is depicted in a 'raucous' homorhythmic texture in four or five parts [ex VIII/10 - p3]. A later version of its call (p6) employs a number of recognisable patterns, as follows:

Raven's Homorhythmic Song (p6)

bar	characteristic
1	epitrite II
2	iamb
3	double-iamb
4	harmonic ostinato
5	iamb
6	3 chordal-complexes
7	cretic
8	2 'stabs'
9	5 chordal-complexes
10	bacchius
11	tribach + bacchius

Of a different character again are the simple accompanying chords that give the spectacled warbler its 'tender[ness]'. This particular song, which is often coloured with E major and an added C#, is given a notable prominence at this stage: later, other songs achieve equal or greater significance.

Although 'cadenza' may seem an inappropriate term for a section of this music, since the whole of the *Catalogue d'Oiseaux* is written for piano solo, certain longer than average vocalisations perhaps justify the description. As in the traditional concerto cadenza certain motives appear in various guises, so in these passages many earlier melodic and rhythmic features are now virtuosically reviewed and developed. These solos give the impression of the piano cadenzas found in *Réveil des Oiseaux* or *Oiseaux Exotiques*. The first example - the rock bunting, p14 - uses thematic material taken from its earlier appearance after the first verse [ex VIII/11 - p10]; B natural is the reference note common to both cadenza and source. Equally, continual demisemi-quavers are typically broken up by grace notes and semiquaver G#s in both instances. The demisemi-quavers are mostly divided into groups of threes and fives. The groups of threes are usually tribachic cells; however, many porrectus flexus melodic shapes are found. The melodic shape B-E-B-G# is written with a group of three followed by a single note, but groups of five also present this shape with two additional B naturals at the beginning, or as part of a cell. With the exception of the occasional C# and Bb, the entire solo is based around the porrectus flexus, B-E-B-G#. It is, however, the lavish solo from the checkla lark that can be likened most to a cadenza. Completed with nine crotchet rests and running for a comparatively longer length, this spectacular solo is mostly homophonic; again the top B natural is a common reference point. Passages of homophonic demisemi-quavers dominate the solo: they are divided by five bass flourishes of one bar in length, seven two-part falling effects and a two-voiced trill. This section finishes with a two-voiced homophonic alternator in a crescendo and ensuing high-pitched 'chirp' [ex VIII/12 - pp17-19]. At p21 a counterpoint between two

goldfinches begins: their songs are related in character, as both birds alternate melody with high-pitched trills. The B natural is not the only tonal/pitch reference point to be made. E major, and the notes in its triad, appear frequently, especially after the multicoloured sunset (red, orange and violet) is repeated 'above the mountain', as the spectacled warbler is presented with an accompanying E major 6 chord. Interestingly, the Turangalila motives representing the sea and the colour chords of sunset are also included: they are the first subsidiary themes from the sixth movement of this symphony, 'Jardin du Sommeil d'Amour'. The piece concludes with the memory of a bird; on this occasion the spectacled warbler's song is reviewed, at a tenth of its original speed and once again accompanied by an E major chord with an added sixth [ex VIII/13 - p27, s5, b1-2].

Book Three consists of two short pieces both of which describe aspects associated with night-time. The first, 'La Chouette Hulotte'/'Tawny Owl' (5), alternates sections representing the night, with its quasi-serial continuum, and calls of various owls in the Oregeval wood in the Isère. Here, many disturbing images are created with descriptions such as 'vague et terrifiant'/'hazy and terrifying' or 'étrange, inquiétant'/'strange worrying', and at the end of the piece even 'un cri d'enfant assassiné'/'the cry of a murdered child'.

The 'night' episodes are more substantial than the sporadic calls from the owls. In these quasi-serial sections, segregated jerks of sound appear out of the texture from the notes with fortissimo markings, while certain moments are more busy than others. The essential ABAB form of the piece is as follows:

A - The Night	organised pitches, dynamics and durations
B - Calls of Owls	(i) long-eared owl (ii) little owl (iii) tawny owl
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B - Calls of Owls	(i) long-eared owl (ii) little owl (iii) tawny owl

Each of the 'owl' sections begins with 'very dry and percussive' low C naturals 'like a solemn drum'. Every owl is given a limited time - usually one bar - to present its calls. The music of the long-eared owl may be divided into several parts. Short flourishes often conclude with a top B natural with accompanying pitch or chord; we also find accented forte chords followed by softer ones, forming a quasi-resolution. In the second B section, the long-eared owl appears twice. The first involves two anapaests followed by falling calls, while the second employs two new devices - a combination of epitrite III with trochaic cell, and a double-iamb in echo [see TableII/1]. The form of the second appearance (p7) is as follows:

anapaest +1, trochee, 3 iambs, double-iamb in echo.

In addition, the chords predominantly incorporate the notes C natural and A natural [see p3]. This is important to bear in mind, as the tawny owl more regularly and emphatically employs a similar falling motive where the C natural and A natural are used once again. The first appearance does not present the lavishly chromatic harmonies of later versions. However, the third occurrence of the tawny owl's call (p8) includes 'retentissant'/'resounding' homorhythmic demisemiquaver chordal complexes before two cluster chords which also include the dominant falling pitches C to A [ex VIII/14]. This densely clustered homorhythmic texture (one voice dominant) represents the dramatic change in timbre from 'screeching' to 'hollow', as Peter Hill suggests¹³. The little owl includes a final 'yelped' call and 'mewed' white/black ascending glissando effect. Various harmonisations of this C-A call continue throughout the movement: other subjective suggestions are also included, such as 'lugubre et douloureux'/'dismal and harrowing', in order to help the performer to achieve the correct timbre.

The second piece in this couplet representing night is 'L'Alouette Lulu'/'The Wood Lark'(6). An impression of a calm night is instantly produced by four chords ending with Bb major, and leading onto a superior resonance created by the principal bird's 'poetic, liquid, unreal' repetitive homophonic call, featuring relentless accented iambic groups. Each bar of chords portraying the calm night is followed by a motive using one, two or three notes and repeated many times. The wood lark provides decoration to the simple underlying chords, a device deployed by Messiaen in very early pieces.

The form may be simplified as follows:

A = Night chords and wood lark decoration

B = Nightingale Interlude

<u>A</u>	<u>bars 1-15</u>
<u>B</u>	<u>bars 15-24</u>
<u>A</u>	<u>bars 24-26</u>
<u>B</u>	<u>bars 26-39</u>
<u>A</u>	<u>bars 39-41</u>
<u>B</u>	<u>bars 41-42</u>
<u>A</u>	<u>bars 42-44</u>
<u>B</u>	<u>bars 44-49</u>
<u>A</u>	<u>bars 49-end</u>

The form uses two contrasting textures. The first, entitled ‘poetic, liquid, unreal’, comprises simple chordal progressions with ensuing hybrid texture set up by the wood lark, and the second is the often ‘sparkling and caustic’ vocalisations produced by a nightingale. The harmonic ostinato part of the nightingale’s song is also introduced by the composer as having a sonority ‘like a harpsichord mixed with a gong’. Its phrases can be subdivided into four categories as follows [ex VIII/15]:

- (1) 'Sparkling, caustic': random chords built up from 4ths, 5ths and 2nds [p3, s4, b1]
- (2) Two-part alternator [p3, s3, b3]
- (3) grace notes and abrupt chords [p3, s4, b1]
- (4) 'Like a harpsichord mixed with a gong': homorhythmic repeated bass chords [p3, s4, b2]

Later the nightingale has a rich chordal alternator. In the same way, the two-note iambs and 'deux en deux' repetitions of the woodlark are later given additional harmonisation [see b32 and b43].

The repeated chords are also found in 1 (above) on several occasions. The final 'mysterious' repeated calls of the wood lark 'merge into the silence', as if the music is fading into the distance - reminiscent of Keats' nightingale, whose 'plaintive anthem fades'.

'La Rousserolle Effarvatte' ('The Reed Warbler') is the seventh piece of the cycle. Set in the Sologne just south of Orléans, it is the longest piece, and is central to the whole of *Catalogue d'Oiseaux*. In a piece of about thirty minutes' duration, Messiaen represents the reed warbler, its habitat, and other species from midnight to 3 a.m. the following morning - a period of twenty-seven hours.

Typically, musicologists have analysed Messiaen's formal structures using terminology such as 'strophes', 'refrains', 'introductions' and 'codas': these subdivisions are often very helpful to the analyst. However, on this occasion, as Messiaen has so meticulously marked the times of day at various moments in the score, it is perhaps more revealing to present the material in direct relation to the circadian time-scale¹⁴. In addition, in his preface Messiaen divides the piece into times of day, drawing attention to key features of the music. A sense of timelessness is once again created: not only does the tempo continually fluctuate, but also certain periods of time are given unequal lengths in the score. For example, the grasshopper warbler's trill - which ends up 'like a buzzing of insects' - is sufficient to represent noon and the 'chirruping lassitude of nature under the sun'¹⁵. After a one bar rest, the reed warbler resumes at five o'clock in the afternoon. In contrast, the period from 5 p.m. to 6 p.m. incorporates longer sections of birdsong and non-birdsong material, and runs for several minutes (p18-34).

The 'mysterious' 'music of the ponds' that opens the piece is followed directly by a 'chorus of frogs'. This chorus perfectly enhances the notion of a damp environment, ready for the first appearance of the principal bird, the reed warbler. This bird is given two main solos: the first is found at this early stage (pp4-8), where many of the characteristics of the later 'cadenza', and indeed the counterpointed songs of two reed warblers, are first intimated [ex VIII/16]. All three sections display virtuosic and rapid music that is unparalleled in the *Catalogue d'Oiseaux*. Both solo passages are marked with a note for the performer - 'avec volubilité, et une grande diversité d'attaques - les notes piquées: sèches et rebondissantes'/'with assertiveness, and a full range of attacks - the grace notes

[to be played] dryly and percussively'. This cadential solo includes numerous interruption calls which separate repeated homorhythmic or homophonic calls based on two or three notes. Incessant ionic minors, anapaests and iambs are incorporated during the first solo, while the later 'cadenza' is not so clear cut. Most impressive is a particular phrase of the reed warbler which, 'like a harp's glissando', occurs in its own right and is accompanied by trillings of a second reed warbler.

Messiaen gives precise indications of the ambience of the environment - that is to say, the programmatic mood of the music. The phrase, 'Solemnity of the Night', appears at three in the morning (p9) and at midnight the following day (p42). In both instances, the music employs exactly the same sonorities¹⁶: extremely quick cluster chords that, 'like a clash of cymbals', alternate white and black notes are followed by a loud bottom A natural and two superimposed resonance effects. The first is like 'metallic vibrations' - the pianissimo major 7th C-B - while the second is a loud minor 7th interval in the bass, 'like trombones'.

'Sunrise[s]' and 'Sunset[s]' appear from time to time in various guises, displaying exuberant colour associations. These associations are listed in order below:

Sunrises and Sunsets in 'La Rousserolle Effarvatte'

Page	Description/ Characteristics	Location	Time/Period
11	<u>Sunrise 1</u> - pink and mauve orange rose and mauve (dreamy)	waterlily pond	6 a.m.
12	<u>Sunrise 2</u> - dense chromatic chords		6-8 a.m.
12	<u>Sunrise 3</u> - dense chromatic chords and cluster ascension ¹⁷		6-8 a.m.
13	<u>Sunrise 4</u> - mauve + gilded		6-8 a.m.
14	<u>Sunrise 5</u> - mauve + gilded ¹⁸		6-8 a.m.
15	<u>Sunrise 6</u> - chordal ascension		6-8 a.m.
38-39	<u>Sunset 1</u> - red and violet orange, red violet descending chromatic chords + violet and gilded (dreamy)	Iris pond	9 p.m.
40	<u>Sunset 2</u> - red and violet descending chromatic chords (dreamy)	Iris pond	9 p.m. - Midnight
40	<u>Sunset 3</u> - all lower in range	Iris pond	9 p.m. -

			Midnight
41	<u>Sunset 4</u> - 'the red disk of the sun meets its own reflection and sinks into the water' chromatic descending cluster chords (extended version)	Iris pond	9 p.m. - Midnight

Interestingly, Messiaen includes two short sections entitled 'memory of sunset' which both take on a dark violet colouration. The specified sonorities all affect the timbres of the birdsong. These striking passages also help divide the musical form of the piece, which is shown below:

Page Nos.	Features
1-3	'music of ponds' (midnight), frogs
4-8	reed warbler's 1st grand solo (3 a.m.)
9-11	'solemnity of the night' (3 a.m.), noises in the marsh etc., frog
11-15	sunrises (6 a.m.), blackbird, red-backed shrike, redstart
15-18	yellow irises (8 a.m.), pheasant, reed bunting, green woodpecker, starling, great tit, white wagtail
18	grasshopper warbler's extended trill - noon
18-34	reed warbler (5 p.m.), sedge warbler, purple foxglove, great reed warbler,

	black-headed gull, coot, two reed warblers in counterpoint
34-37	yellow irises (6 p.m.), grasshopper warbler, coot, sky lark, frogs, water rail
38-42	sunset on iris pond (9 p.m.), bittern, 'the red disk of the sun meets its own reflection and sinks into the water', nightingale, memory of sunset
42-45	(midnight) - solemnity of the night, nightingale, bittern, noises in the marshes, frog, memory (of night)
46-51	reed warbler's 2 nd grand solo (3 a.m.), frogs, music of ponds, bittern

Book 5 begins with the piece, 'L'Alouette Calandrelle' (no.8), which is set in the Crau wilderness of Provence. The form of the piece is in three sections, with a coda:

<u>Section 1</u>
Introductory chords, short-toed lark, chorus of cicadas, kestrel, quail, short-toed lark
<u>Section 2</u>
Short-toed lark + crested lark counterpoint, short-toed lark
<u>Section 3</u>
chorus of cicadas, kestrel, quail, short-toed lark, introductory chords
<u>Coda</u>
quail, sky lark, quail, introductory chords, short-toed lark

Messiaen begins with some information about the setting of the piece. Above two introductory chords, the latter being F#, he writes, 'warmth and solitude of the Crau desert'. The 'Lent' tempo indication, the 'bright' and rapid interruptions by the short-toed lark and the rests that divide each phrase of music immediately create a sense of sparsity. The composer chooses several birds that are represented by static homorhythmic chords, while the invented chords that are assigned are repeated several times in their short sections. The birds represented in this way are:

(1) chorus of cicadas

(2) kestrel

(3) quail

If the first invented chord in a chosen section is labelled 'a' and the second 'b', then the following repetitions are to be found:

(1) chorus of cicadas [p1, s3, b2]	abbb, abbb, abbb [ex VIII/17a]
(2) kestrel [p1,s4, b2]	aaaaaab aaaaabbc [ex VIII/17b]
(3) quail in cretic rhythm [p2, s1, b1]	aaa, aaa [ex VIII/17c]

Both 'parallel contour homorhythmic' and 'mixed contour homorhythmic' textures are incorporated in the short-toed lark's songs:-

parallel contour homorhythmic chords [p2, s4, b2]

mixed contour homorhythmic chords [p2, s2, b2]

The rest of the principal's song is derived from its one-voiced dominant homophonic source at bar 2. Each two-part chord is closely related to the original call at bar 2:

compound minor 2nds are frequently used [see p2, s2, b1]. The B natural/Ab cell is repeated toward the end of the phrase. This passage of the short-toed lark is divided into the following textures:

- i) homophony (one voice dominant)
- ii) mixed-contour homorhythmic chords
- iii) homophony (independent contours - repeated pattern)
- vi) parallel homorhythmic chords
- v) minim
- vi) two-voiced polyphony (conversation with crested lark)

[ex VIII/18]

The piece reaches its apogee with the homophonic song of the sky lark, marked 'jubilation véhémence'/'energetic joy'. This loud and declamatory song is continuously homophonic throughout; the demisemiquavers are divided by single quavers, semiquavers or the rhythm, demisemiquaver - quaver in a descending interval. This solo is a forerunner of the later 'L'Alouette des Champs' in *Petites Esquisses d'Oiseaux*.

This rather simple but effective piece is followed by the more formally complex 'La Bouscarle' ('Cetti's warbler'). Set in close proximity to the river Charente, it is inevitable that water plays a supporting rôle to the many representations of birds and indeed animals. Two sections are devoted to the reflection on the water from the willows and poplar trees, while four verses of music are entitled simply, 'la rivière'. These verses, with their calm sonorities based on mode 3, act as accompanying passages to birdsong (p4) and as a passage in their own right. Bird vocalisations and sounds of other animals are incorporated in this realisation: from the 'pique, pointu, très sec'/'cutting, pointed, very dry' squeals of the moorhen, the 'joyeux et clair'/'joyous and bright' sonorities of the blackbird, to the 'flèche bleue-verte'/'blue-green arrow' of the kingfisher's flight.

Timbre plays an important rôle in 'La Bouscarle'. At this stage in Messiaen's writing, the majority of birdsongs and other animals' noises also have at least one indication of either the spirit in which they should be played, or their general articulation. In fact, most of the birds' songs are distinguished by different annotations. A full list of these as they appear in this piece is shown below:

(1) Cetti's warbler	abrupt and violent ¹⁹
(2) moorhen	cutting, pointed, sharp
(3) kingfisher	dry (abrupt)
(4) blackbird	a) joyous and bright

	b) abrupt and violent
(5) robin	liquid, intimate, confiding
(6) corn crake	scraping, to-and-fro noise of saw
(7) song thrush	a) like a chanted spell, active, triumphant b) pearl-like, liquid, snatched
(8) wren	-
(9) chaffinch	-
(10) blackcap	a) bright and gentle, joyous refrain, authoritative b) dazzling
(11) hoopoe	stifled, monotonous
(12) nightingale	a) caustic, colouration of a harpsichord and gong b) incisive, abrupt, sparkling
(13) sand martin	-
(14) yellow wagtail	-

The kingfisher not only has its own bird vocalisation marked in the score, but also his rapid flight of courtship is depicted with its 'glittering of a blue and green jewel'. Both the chordal nuptial flight and the ascending chordal 'blue-green arrow' features are related quite closely to mode 3, and complement the sonorities, reflections and colours of the river. The river recalls the falling fourths and modal quality of the 'love theme' from the Turangalila Symphony.

'Le Merle de Roche' (X) is set amongst the rock shapes in the stone circle of Mourèze in the Hérault. The piece takes an arch form. The introduction establishes the scene, which is one of immense profundity and mysteriousness. The 'black and profound' music found in the earliest bars comprises two quiet low chords in the bass, shortly followed by a cluster chord in the treble clef: they represent the night in its moonlit state, 'the huge hand of stone, raised as a magical sign'. The male eagle owl follows on in solemn 'ululation', and the female responds with a very 'dry' succession of low muffled anapaestic repetitions. The next sections display the jackdaws at daybreak (featuring a variety of bacchius, épitrite II and various other metres) and vocalisations from the black redstart, which are interspersed with representations of the stegosaurus and diplodocus, set in stone. The central section which represents midday, takes the following form: rock thrush strophe (10 a.m.) - permutation series - rock thrush strophe (5 p.m.). The permutations series takes thirty-two chromatic durations - reminiscent of 'Soixante-Quatre Durées' from *Livre d'Orgue* (1951). This section represents a 'cortège de fantômes de pierre, transportant une femme morte'/'procession of stone ghosts, transporting a dead woman', the black redstart and various rock formations which suggest dinosaurs. In addition, the rock thrush is idealised ('idéalisé'), displaying the orange/blue colours in its song, and, indeed, in its plumage. The stone dinosaurs, however, are represented by huge intervallic leaps, superior and inferior resonances, rapid changes of tempi and, once again, a permutation series. It is interesting that a non-birdsong section can incorporate as many changes of texture, rhythm and melody as a sophisticated piece of birdsong. The end of dusk - the last section - echoes the sonorities of the introduction: the male and female eagles are heard, while the

densely scored cluster chords that represent the colossal hand of stone conclude the piece in solemn thoughtfulness.

As has been seen in 'La Rousserolle Effarvate' (VII), the grasshopper warbler's trill represents midday; in the same way, birds in this piece mark the time of day. The jackdaws (p2) represent daybreak, while night-time is suggested by the male and female eagle owls. This is the first time that Messiaen has differentiated the vocalisations of male and female: the male eagle owl has a descending chordal cry and a two-part glissando, but the female has repeated anapaestic rhythms and, towards the end of the piece, an additional repeated succession of low bass calls - anapaest, iamb, two anapaests, iamb [ex VIII/19]. As Johnson points out, most impressively, Messiaen incorporates long silences which divide passages in the rock thrush's songs and are regularly used in between the cries of the male eagle owl. The silences and sparse writing create an atmosphere of expectation.

Interestingly, there are whole bars where the composer specifically requests no use of pedal. In a section that depicts stone dinosaurs, short fortissimo accented durations are written, producing a stabbing, scathing effect. Once again, sparseness and anticipation are exemplified by two solitary semiquavers with rests either side of them [p21].

'La Buse Variable' (XI) is set at one end of Lake Laffrey in Dauphiné, at the foot of the 'bare mountain' of the Grand Serre. The form is thus:

Introduction - first section - refrain - second section - refrain - third section - refrain - short fourth section - coda

Each of the sections is divided by a passage from the mistle thrush: open major and minor chords accompany the iambic rhythm in two parts [ex VIII/20]. This music is given the instruction: 'strong, bright, nostalgic, bronzed colouration' (p5). The bass chords alternate C major with E flat minor, but it is the above two-part figurations in the right hand that provide the dissonance. Of most notable significance is the composer's employment of open parallel fifths. Throughout this section, the third of the chord is in the top part of the left hand, while parallel fifths are found in the bottom two voices. In addition, parallel fifths can be found in the right hand. Furthermore, Messiaen groups similar intervallic relationships together: parallel sixths are incorporated, while major thirds are often followed by minor thirds²⁰ [previous ex VIII/20 - p5, s3,b2]. These characteristically resounding parallel fifths are also heard in some of the other bird vocalisations. The buzzard, for instance, includes three perfect 5ths in succession. In a later appearance, its 'mewing cry' is held together by open fifths in the right hand, and augmented and perfect fourths in the left [ex VIII/21 - p12, s4, b1-3]. The yellowhammer also has parallel fifths in its brief calls marked 'fresh, naïve'. However, it is not just parallel fifths that are prominent: of equal note is the employment of minor thirds followed by major thirds, as also is the use of parallel sixths and perfect fourths. The carrion crow's song, for instance, is made up of repeated falling climacus cells, written in thirds in the right hand, while an arpeggio-type figuration appears in the left [ex VIII/22 - p8, s4, b2].

Both introduction and coda comprise a) calls and cries of the buzzard, and b) its flight which ‘...glides in circles - [and]...takes in the landscape’. Messiaen meticulously indicates the italicised ‘*Ral*’ instruction for each slow quaver beat: this serene two-part passage is very widely spaced and uses a series of twelve-note intervensions. This section is contrasted by the ‘optimistic and triumphant’ song of the chaffinch that declares a homorhythmic call. Dramatic contrasts are not uncommon devices used by the composer: the listener cannot help but recognise exactly when (for example) a new bird vocalisation or description of landscape begins. A striking example is the interchange between the fresh open fifth calls of the yellowhammer and the sweet, high-pitched alternators of the goldfinch, whose dulcet tones are ‘like small bells’, and have the ‘timbre of a glockenspiel’.

The only bird vocalisation that seems to develop into a song - as opposed to the other short and discrete sections - is that of the whitethroat, whose longer than average passage (p14-15) is animated by its continuous demisemi-quavers with only occasional rests. The piece concludes, as it began, with the buzzard, followed by a representation of its flight; however, in this later version it ascends into the air.²¹

‘Le Traquet Rieur’ (‘The Black Wheatear’ - XII) is in several ways related to both ‘Le Traquet Stapazin’ (IV) and ‘Le Merle Bleu’ (III). All three pieces are set in the Roussillon district. ‘Le Merle Bleu’ represents the blue sea (in several guises), its terrifying waves and the resonances of the rock faces; ‘Le Traquet Stapazin’ views the scene from the mainland

side, depicting terraced vineyards, cork tree forests and mountains. 'Le Traquet Rieur' is set near Port-Vendres and also depicts rock faces and the blue sea. In addition, the piece shares many of the bird vocalisations of its predecessors.

Here, the sea is represented in three different ways. The first, entitled 'joie de la mer bleue'/'joy of the blue sea' appears on four occasions (pp1,6,12 and 19 of the score), dividing the three strophes that present various bird vocalisations. Each resonant appearance is exactly the same - each section begins with a resounding low bass cluster chord, an A major chord in second inversion, an ascending broken chord using only the root and fifth of the same chord, and is followed by a 'dazzling' fortissimo group of chords. Additionally, all the strophes resume after a long pause. In 'Le Merle Bleu', A major is often referred to, particularly when accompanying the blue rock thrush. The opening low bass cluster chord, representing the 'joy of the blue sea', is reminiscent of the 'boom of the surf', also in 'Le Merle Bleu'.

The 'coup de vent sur la mer'/'gust of wind on the sea' is presented by two-part homophony: the passage begins in the bass and rises to the top of the piano's register, in a gradual crescendo, and all in staccato (p17). The 'poudrolement argenté du soleil sur la mer'/'silvery dust haze of the sun on the sea' is also written in semiquavers, but this section contains occasional four-part colour chords. Both of these sections appear only once in the piece - in the last strophe.

The simple form of the piece is shown below:

Joy of the blue sea	p1
Strophe 1	p1-6
Joy of the blue sea	p6
Strophe 2	p6-12
Joy of the blue sea	p12
Strophe 3	p12-19
Joy of the blue sea	p19

Apart from the three distinct appearances of the sea, Messiaen also depicts vocalisations from the black-eared wheatear, swifts, herring gull, black wheatear, blue rock thrush and spectacled warbler. It is important, first, to differentiate between the black-eared wheatear (principal bird of IV) and the black wheatear (XII). The blue rock thrush, herring gull and swifts are used in 'Le Merle Bleu', while the black-eared wheatear, spectacled warbler and herring gull are employed in 'Le Traquet Stapazin' - in fact, all the afore-mentioned birds are found in this later piece. The swifts - only found in numbers and in the *Catalogue d'Oiseaux* - are on both occasions given the instruction, 'strident': in 'Le Merle Bleu' they are portrayed by three or four groups of falling colour chords, whereas in 'Le Traquet Rieur', cluster chords are used, and a subsequent direction, 'piercing', is included. Both examples are written in altissimi and are often presented in falling two-chord phrases. The blue rock thrush ('Rieur' and 'Merle Bleu') and the spectacled warbler ('Rieur' and

‘Stapazin’) are represented with a static chordal accompaniment. The blue rock thrush, however, in ‘Le Merle Bleu’ also includes frantic homorhythmic calls. The spectacled warbler is usually given the instruction, ‘with assertiveness’, and in ‘Le Traquet Stapazin’, the directions ‘ensoleillé, avec volubilité/‘sunny, with assertiveness’ and ‘gai/‘cheerful’ are included. The herring gull, common to all three works, is consistently given short abrupt cries. In ‘Le Traquet Rieur’, its ‘aboïement hurlé/‘howling bark[s]’ are reminiscent of those found in ‘Le Merle Bleu’: continuous repeated cluster chords are always preceded by a grace-note chord. ‘Le Merle Bleu’ also includes ‘ferocious’ short rhythmic patterns which portray a sniggering, almost persecutory manner. ‘Le Traquet Stapazin’ also presents the herring gull in flight. Once again, its vocalisations are short and brief; however, short quasi-glissandi are ‘barked’, preceded by ‘cruel’ abrupt semiquavers, and a pattern of ‘ricanement percuté, très sec/‘sniggeringly percussive, very dry’ staccato chords, written in the bass clef. This gives the listener an idea of the range of its calls.

‘Le Traquet Rieur’ also incorporates these ubiquitous semiquaver cluster chords which are immediately preceded by grace notes in this ‘dazzling’ principal bird’s song. In addition, the black wheatear is given a chordal accompaniment, where frantic parallel fourths, in demisemiquavers, dominate the right hand. This principal bird is also densely scored with seven-part invented chords which are no less colourful than those of the blue rock thrush’s often affectionate, even languid sonorities [ex VIII/23a, b]. Just as before, in ‘Le Merle Bleu’, it was surrounded by the modal interludes of the rich blue sea, so here the blue rock thrush again is accompanied by these lush, often triadic harmonies. Indeed, there are frequent appearances of A major chords, accompanying the birdsong in the blue rock

thrush sections, and in those of the spectacled warbler [ex VIII/24]. The piece ends, as it began, with the 'joy of the blue sea' involving both superior and inferior resonance effects.

Set on the barren island of Ushant in the Finistère region of Brittany, 'Le Courlis Cendré' ('The Curlew' - XIII) is the final piece of the *Catalogue d'Oiseaux*. Messiaen uses so many birdsongs in such a short space of time and in such a free fashion that it would be confusing to try to establish a definite form. Certain features may, however, be distinguished: for example, the texture that represents the sounds of waves returns from time to time in the piece, each appearance being concise except for the additional bass flourishes and rumbling ostinato demisemiquavers which occur on page 13. Likewise, in the middle of the piece there is a section devoted to water, which begins as a twelve-note passage and gradually leads into another section of notable length which includes the programmatic instruction, 'the night and the fog spreads little by little'. Its thick chords, which are intended to be played heavily and with, as Messiaen puts it, 'high hands', continuously descend as darkness and fog create a generally indistinct environment. A fortissimo alarm is then given off from the lighthouse in the form of a huge bass cluster chord and inferior resonance. Further notable features include the two subsequent alarms which appear between this point and the end, interspersed with various calls from the herring gull, sandwich tern, little ringed plover, black-headed gull, little tern and redshank. The ascending chromatic quasi-glissandi of the curlew return: they are all identical and played seventeen times. The piece concludes with the 'bruit du ressac'/'noise of the surf' which, in a blaring reverberation, interchanges black-note ascending runs and white-note clusters, all low in the bass.

The vocalisations of the curlew are portrayed in three separate ways. First, single E flat and E minor chords in the bass accompany ‘fluted’ and ‘sorrowful’ colour chords high in the treble clef. The second version is characterised by chromatic runs and ‘wild, passionate’ trills, while the third includes the ‘tragic and desolate’ repeated quasi-glissandi effects.²² A D minor chord underlies this latter category, and is found in the curlew’s final appearance at the end of the work [ex VIII/25a, b, c].²³

Apart from these longer than average sections, many short calls from various birds are sounded throughout the piece. Messiaen employs mostly birds that are associated with the shore, often referred to as ‘seabirds’. A list of the birds used in ‘Le Courlis Cendré’ is provided below:

curlew (‘fluted²⁴, sorrowful’; ‘wild and passionate’; glissandi - ‘tragic and desolate’)

sandwich tern (‘piercing’)

black-headed gull (cruel, [with] wicked pleasure)

little ringed plover

redshank (‘gentle and fluted’)

herring gull (occasionally with the marking ‘resonant, like horns’)

common gull (‘strident’)

guillemot

oystercatcher

turnstone

The abrupt calls of these birds are all extremely repetitive. For instance, one particular passage of the oystercatcher involves many separate parts, all of which comprise very few notes which are repeated [ex VIII/26]. As is common, each bar presents a separate motivic idea, shown below:

- b1 - interruption call
- b2 - 5 tribachic cells + high accented pitch
- b3 - 7 iambs
- b4 - 5 tribachic cells
- b5 - 4 iambs
- b6 - 9 iambs
- b7 - 3 tribachic cells + high accented pitch
- b8 - trillings in clusters
- b9 - two-part homophony
- b10 - trillings
- b11 - scandicus (2-pt)
- b12 - 2 chords (Eb, D, E)
- b13 - scandicus (2-pt)
- b14 - 3 chords (as 12)
- b15 - scandicus (2-pt)
- b16 - 5 chords (as 12)
- b17 - two-part alternator
- b18 - high-pitched chord
- b19 - 5 iambs

The shore is perfectly captured by these yelled, brief calls from the seabirds.

The *Catalogue d'Oiseaux* has rightly been given particular emphasis, largely because so many timbres have been created on this instrument, and so many possibilities intimated for other instruments and combinations. In later works, the orchestra is to be used with the same precision. Indeed, Messiaen must have had ideas of orchestration, as he includes instructions in the *Catalogue* such as 'like a glockenspiel' (goldfinch, 'Le Traquet

Stapazin', p2), 'like a solemn drum' ('La Chouette Hulotte, p6) and superimposes a multiplicity of similes: 'like a clash of cymbals', 'like a tam-tam', 'like metallic vibrations' and 'like trombones' ('La Rousserolle Effarvate', p42). Messiaen's programmatic descriptions also give an impression of the timbre that is to be achieved. Timbre, at this stage of Messiaen's development, has become of paramount importance: it is for this reason, perhaps, that Messiaen decided to explore once again bird vocalisations in relation to orchestral music.

Notes to Chapter VIII

- ¹ Both the number of books and pieces in this work are prime numbers, reaffirming the composer's paradoxical affiliation with asymmetry/symmetry.
- ² Material explained in Messiaen's treatise, Technique de mon Langage Musical (Paris, Leduc, 1944) - in other words, early procedures.
- ³ Although, in this work, only adaptations from the originals are used.
- ⁴ Articulation is excluded due to the difficulties this would inflict on the performer.
- ⁵ Taken from the programme notes accompanying Yvonne Loriod's recording, Erato: STU 70595-8.
- ⁶ See Messiaen Companion, ed. P. Hill (London, Faber, 1995), p327.
- ⁷ See Robert Sherlaw Johnson, Messiaen, (London, Dent, 1976, revised 1989), pp134-135.
- ⁸ The golden eagle is never portrayed in song: only its flight is represented, carried as it is by the currents of the air.
- ⁹ A literal translation of the word 'doré' (as written, by Messiaen, in the score) is 'gilded': it seems that the dominant part, the left hand, is covered with gold reflections of the right hand. Gold appears later in the work, see bar 115.
- ¹⁰ These accents, especially those in the left hand, make it difficult for the listener to differentiate between the first and second garden warbler.
- ¹¹ Messiaen Companion, op. cit., p 334.
- ¹² These are translations taken from Messiaen's annotations in the score.
- ¹³ Messiaen Companion, op. cit., p327.
- ¹⁴ See Preface to the score.
- ¹⁵ See Messiaen's own footnote in the score.
- ¹⁶ The music is identical except for the fact that the earlier version repeats the first two bars after the chordal section, labelled 'très lent'.
- ¹⁷ Technique de mon Langage Musical, op. cit., musical version, nos. 366A (p56) and 333 (p52).
- ¹⁸ Although not indicated by Messiaen.
- ¹⁹ These characteristics are direct translations from the score.
- ²⁰ The opposite is also found, i.e. minor third/major third. In addition, Messiaen plays with inversions, mostly minor 6th/major 3rd, perfect 4th/perfect 5th relationships.
- ²¹ In the first version, it descends.
- ²² These trills are written a fifth apart giving a very open quality.
- ²³ At the beginning of the work a similarly spread bass chord is used in E flat and E major.
- ²⁴ It is interesting that Messiaen frequently uses, as an indication of timbre, the direction 'fluted': this term is employed by many ornithologists when describing the character of a bird's vocalisation.

Chapter IX: Use of Birdsong in Selected Works 1960-1987

Chronochromie (1960)

Heinrich Ströbel commissioned *Chronochromie*, and it was first performed at the Donaueschingen Festival, Germany in October 1960. *Chronochromie* is an extremely complex work for orchestra in which the piano - found in *Réveil des Oiseaux* and *Oiseaux Exotiques* - is replaced by tuned percussion. The title, translated as 'The Colour of Time', suggests that birdsong is of less integral importance than in the immediately preceding works, yet, in fact, Messiaen brings together birds from such diverse countries as France, Sweden, Japan and Mexico. It is apparent, however, that a balance has been struck between birdsong and other sources of musical composition. The prevailing *modus operandi* of the second and fourth movements (Strophe I & II) is based on three superimposed permutations, where thirty-two chromatic durations are employed: each of the three permutations is coloured in entirely distinct ways. Although the word 'time' is used in the title, the work seems to be timeless with its almost immeasurable freedom, produced by a multitude of superimposed rhythmic complexities. Typically, the bar lines - especially in the case of the *Épôde* - are predominantly used for co-ordination by the conductor of the instrumentalists. Each permutation is assigned to a different metal percussion instrument, and has a separate intensity, timbre and pitch. Moreover, the harmonies of the strings produce elaborate cascades of colours, while the whole register of each instrument is explored¹. He mentions specific colour combinations such as 'milky-

white sonorous complex embellished with orange and hemmed with gold' or 'pale grey with green and violet reflections²'.

Chronochromie involves many technical procedures, such as the interversion system, alongside what Messiaen describes as 'natural material': both features take on equal emphasis in the work. The piece is divided into seven movements as follows:

- I Introduction
- II Strophe I
- III Antistrophe I
- IV Strophe II
- V Antistrophe II
- VI Épôde
- VII Coda

Taken from ancient Greek poetry, the triad (Strophe - Antistrophe - Epode) is extended by the doubling of the first two movements, and by its framing - notably, the introduction and the coda. As in Greek poetry, the strophe and antistrophe are similar in format, although, according to Messiaen, the music involves different counterpoint, other rhythms and colour chords.³ In the two strophes, three superimposed versions of three lines of permutations on thirty-two note-values underpin the movements. In Strophe I, Messiaen superimposes permutations 1, 2 and 3, and in the second strophe, permutations 22, 23 and 24 are employed. The note-values are 'coloured', in order that the listener may recognise

these patterns. There are three ways in which this is done. The first is the 'minting' technique (Le Monnayage) where the long durations are varied by the constant use of subdivisions, effectively a common denominator, in this case the demisemiquaver (32nd note) which is used in the counterpointed birdsong. The 'unfolding of durations' is given to the metallic percussion instruments: the upper 'unfolding' is played by three gongs, the central 'unfolding' by the set of bells, and the lower unfolding by a Chinese cymbal, suspended cymbal and tam-tam. Secondly, timbre is varied constantly through the colour chords and elaborate instrumentation. The third technique is named by Messiaen as 'strains of chords'. The attacks of the metallic percussion instruments are doubled, underlined and prolonged by chords on twenty-two solo strings. The strophes use the permutation series throughout the movement, as a *cantus firmus*.

The antistrophes are both closely related in structure and also employ three permutations of the durational series. However, the antistrophes use only part of the permutation series at the ends of the movements. The antistrophes concentrate on the songs of the song thrush and skylark, played on various instrumental combinations [ex IX/1a, b].

The introduction makes use of bird vocalisations from the osprey (Sweden), Paradise and Narcissus flycatchers (Japan), grey thrush (Japan), Japanese bush warbler (Japan) and the acute, fortissimo calls of the white-tailed eagle. Interventions are employed, and there are two sections representing the rocks and mountain torrents. The rocks are inspired by fortissimo 'jagged' twelve-note chords played by the whole orchestra, while the mountain torrents are portrayed by flourishes of quintuplet demisemiquavers in the violas and a

'vaporous confusion' of trills on the second violins. The Narcissus flycatcher's short passage is written for the xylophone and marimba: both instruments play concurrently in a high-pitched fashion, producing a porrectus coloured by the woodwind, and are involved in an ascending glissando [ex IX/2 - p22]. The coda uses most of the same textures as its earlier counterpart, although the songs of a few additional birds are included, notably the little cuckoo (Japan), the blue flycatcher (Japan) and the white-eye (Japan) [ex IX/3]. The work concludes with the densely orchestrated accented chords of the white-tailed eagle [ex IX/4].

The sixth movement - the *Épôde* - caused an outcry at its first performance: reminiscent of the dawn chorus in *Réveil des Oiseaux*, this movement involves eighteen solo strings in an almost continuous four-minute outpouring of birdsong. The movement is divided into two sections as follows:

Section I pp155-178

Section II pp178-204

The first section assigns one solo instrument to each bird's song, while any changes in the second section are shown here in bold:

Instrument	1st Section	2nd Section
1 st violin 1	1 st blackbird	1 st blackbird
1 st violin 2	2 nd blackbird	2 nd blackbird
1 st violin 3	3 rd blackbird	3 rd blackbird
1 st violin 4	4 th blackbird	4 th blackbird
1 st violin 5	yellowhammer	yellowhammer
1 st violin 6	1 st goldfinch	linnet
2 nd violin 1	chiffchaff	chiffchaff
2 nd violin 2	2 nd goldfinch	1 st garden warbler
2 nd violin 3	whitethroat	whitethroat
2 nd violin 4	lesser whitethroat	2 nd garden warbler + lesser whitethroat
2 nd violin 5	1 st chaffinch	<i>[continues without break]</i>
2 nd violin 6	2 nd chaffinch	<i>[continues without break]</i>
viola 2	5 th blackbird	5 th blackbird
viola 3	6 th blackbird	6 th blackbird
viola 4	greenfinch	greenfinch
cello 1	1 st golden oriole	1 st golden oriole
viola 1	nightingale	nightingale
cello 2	2 nd golden oriole	2 nd golden oriole

At the beginning of the second section (p178) the songs of the linnet (1st violin 6), first garden warbler (2nd violin 2) and second garden warbler (2nd violin 4) are heard, while the

representations of the two chaffinches continue without a break. The most dominant voice at this stage is that of the linnet, marked fortissimo: it is accompanied by the other birds' songs, which remain within the dynamic range p-pp [ex IX/5]. The character of its first bar is striking, consisting of three rising anapaests interrupted by a simple spondee.

The first section, therefore, assigns one solo stringed instrument to one bird's song, occurring in staggered entries: each instrument plays this song until the half-way point. At the opening of this second section most of the birds are silent: the linnet and garden warbler are heard for the first time, while the chaffinches continue as before. Gradually, blackbirds, a whitethroat and nightingale add to the texture; with the exception of the linnet and garden warblers, all instruments are portraying their original bird vocalisations. The only other change in the movement is that, near the close, the second violin 4 returns to the lesser whitethroat.

In such a complex movement that consists of perpetual variation creating an improvisatory quality, it is difficult to grasp the unifying characteristics. Certain features, however, are persistently repeated in the same part. The first and second cello parts (1st and 2nd golden orioles) are generally lower in range than the other songs; in addition, triplet semiquavers, falling intervals in slurs and glissandi effects predominate. The call of the yellowhammer (1st violin 5) involves the same iambic ostinato pattern - grace note E natural followed by an A natural in semiquavers - throughout the movement [ex IX/6]. Similarly, the chiffchaff (2nd violin 1) is very repetitive with its continuous grace note 'chirps'⁴ [ex IX/7], while the nightingale's (1st viola) idiosyncratic quintuplet and sextuplet 'machine-gun'

demisemiquavers and scandicus cells also achieve audible coherence [ex IX/8]. For the listener, the score's complexity is heightened by the overlapping of range and by the similarity of timbre: solo stringed instruments are used throughout. Perhaps Messiaen is suggesting that it is difficult to decipher so many bird vocalisations simultaneously when listening to a dawn chorus in the field. With such a limited variety of timbre, Messiaen is forced to employ varied rhythmic and pitch features in order to highlight important textures and parts of phrases. The composer's varied use of dynamics achieves this to some extent; however, many phrases are undoubtedly concealed due to the fact that they are overshadowed by pitches in the same tessitura, or simply because the human brain is unable to decipher such complex polyphony.

The rôle of the instruments that Messiaen chose for *Chronochromie* varies dramatically throughout. The clarinets are given the agile solos of the two marsh warblers [ex IX/9 - Strophe I, p39] and add to the colouration of the song thrush in a contrasting chordal fashion [previous ex IX/1b]. The violins are also given varying tasks, from the interruption calls echoing the osprey [ex IX/10 - p21] to a complex harmony involving a superimposition of interversions [ex IX/11 - p39], from cluster trills [ex IX/12 - p18] to the agile recapitulation of blackbirds, yellowhammers, goldfinches in the *Épôde*. This notion of 'The Colour of Time' - using colour chords to accentuate or underline bird vocalisations - is to become of paramount importance in future orchestral works. Moreover, instruments are intended to perform a variety of tasks, providing accompaniment, a dominant melodic line, or even producing special effects to enhance

birdsong. As in Messiaen's use of the piano, the range and capabilities of each instrument are fully utilised.

Sept Haïkaï (1962)

As a direct result of a tour to Japan with Yvonne Loriod, Messiaen had noted down Japanese birdsongs new to his repertoire and had been influenced by their habitat, as well as by the *Noh* theatre and the 'Gagaku' Japanese court music. The use of various metallic percussion instruments, xylophone and marimba adds to the sense of the Orient: impressionistically, in this piece, the Japanese birds seem to co-exist in a suitable setting. The choice of instrumentation is minimal and, compared to the traditional symphony orchestra, heavily dominated by wind and percussion instruments. *Catalogue d'Oiseaux* has been shown to be written in a block-like fashion - that is to say, bars or sections of music represent an environmental feature, animal(s) or bird vocalisation, and there is very little development or superimposition of two or more different features. *Sept Haïkaï*, more effectively than in *Chronochromie*, combines many different musical features including birdsong, deçî-tâlas, rhythms, colourations, permutations *et al.* However, the orchestra is divided into separate blocks in both the layout and the scoring: within each group, the instruments are given similar rhythmic features or, often in the case of the eight violins, are scored homorhythmically. There are, of course, solo lines given to the piano³, xylophone and marimba: the piano is able to play huge chords on its own, while the marimba and xylophone occasionally combine in two-part homophony.

The groups are as follows:

Group 1 - piccolo, flute, 2 oboes, cor anglais, clarinet in Eb, 2 clarinets in Bb, bass clarinet, 2 bassoons	Group 2 - trumpet, trombone
Group 3 - 8 violins	Group 4 - xylophone, marimba (soloists)
Group 5 - piano (soloist)	Group 6 - cencerros, bells, crotales, triangle, (and often in one line only) cymbals, 2 gongs, Chinese cymbal, 2 tam-tams (C.G.C.T).

In the first movement, 'Introduction', the piano plays a *tâla* labelled 'rythme droit' and the woodwind plays a retrograde version of the same *tâla*. The percussion has the 'rhythms of the three shakti' (coloured by the brass), the marimba and xylophone play another *tâla*, *miçra varna*, which gradually merges into *simhavikrama*, and eight violins play a melodic line simultaneously. In this case, uncharacteristically in Messiaen's music, the melody is subservient to the rhythmic structures. This must be what Messiaen describes as 'true heterophony'. The coda, too, is a continuation of the superimposition of rhythmic sequences and melodic line in the eight violins.

These 'block-like' formations are used throughout the work with a few single-voiced polyphonic textures as exceptions. There are, however, two movements that involve birdsong as material. The first example is the third movement, 'Yamanaka-Cadenza' (pp27-45). The form is an ABABAB structure, thus:

Bird Chorus 1.....	pp27-30
Piano Cadenza 1 (Narcissus flycatcher)	pp30-32
Bird Chorus 2.....	pp32-35
Piano Cadenza 2 (grey-headed bunting, Japanese Skylark)....	pp35-37
Bird Chorus 3.....	pp37-43
Piano Cadenza 3 (grey thrush).....	pp43-45

At the opening, the woodwind represents the birdsongs in full chorus. The black-faced bunting, Japanese yellow bunting, grey thrush, Japanese white-eye, Indian tree pipit and the Narcissus flycatcher (whose song is given dominance being *forte*) are portrayed, shortly followed by the paradise flycatcher and blue flycatcher [ex IX/13]. In the first bar, the Narcissus flycatcher repeats the same choriambic cell three times (-UU-), while both grey thrush and alpine accentor have anapaestic rhythms (UU-), being, in a sense, mere extensions of the choriamb. Messiaen chooses to present the important Narcissus flycatcher's song with different instruments, singly or in combinations. In fact, during the course of this movement, it is given to the first and second clarinets in Bb (pp27, 29), flute (p29), clarinet in Eb, second oboe (p34), Marimba (p37) and has the piano (p30-32) develop its characteristic in its first cadenza [ex IX/14a, b, c, d, e]. In the choruses, the

Narcissus flycatcher's song involves numerous ascending demisemiquaver runs⁶ and short repeated calls - one of which uses three of the exact pitches found in the scandicus motive of the ubiquitous Japanese bush warbler's call (F#-D-Ab)⁷ [ex IX/15a,b] Indeed, its immediately preceding motivic cells also employ the same triplet rhythm. The Narcissus flycatcher in its cadenza of page 30-31 involves many repeated homophonic patterns, high-pitched alternators and isolated colour-chords. Some of the repeated patterns use colour chords, especially at bar 14 of the cadenza, where an accented chord of a semiquaver in duration is followed by a rapid group of three chords alternating white and black notes. Perhaps this bar may be described as an accented chord followed by a chordal anapaest; but, as each bar employs this formula, it may be justifiable to label it a choriamb. Indeed, bar 6 is a choriamb with an extra chord at the beginning, as is bar 20 an extended paeon IV, being derived from bar 17. Therefore, the cadenza may be categorised as follows:

bar	metre	other features	texture
1-3	choriamb	descending cells	homorhythmic/2-pt
4	rest	rest	rest
5	spondee	widely-spread chords	2 chords
6-7	extended choriamb		homorhythmic
8-9	3/16	repeated 5-note cell	2-pt
10-12	extended choriamb		homorhythmic/2-pt
13	anapaest		homorhythmic
14-15	choriamb	as 13	homorhythmic
16	3/16		1 chord
17-18	paeon IV	descending flourishes	2-pt chords
19		descending flourishes (taken from b17 & 18)	2-pt chords
20-21	extended paeon IV	ascending flourish	2-pt chords
22	rest	rest	rest
23	3/8		3 chords

24-26	iamb, tribach, spondee	2, porrectus, 2	2/3-pt homophonic/ homorhythmic
27		flourish	'scattered'
28	spondee		2 chords
29-30	extended choriamb		homorhythmic
31	rest	rest	rest
32	4/16		homorhythmic (6-pt)
33		ascending 2-pt flourishes	2-pt chords
34		rising alternator	2-pt chords
35	6/32		2 chords (2-pt)
36	2/4		1 chord (4-pt)
37	rest	rest	rest

(Note: when more recognisable melodic and rhythmic features are used, in relation to plainchant and prosody, motivic classification tables are now more succinct).

The Narcissus' representation in the xylophone often recalls the sounds of the nightingale, with its 'machine-gun' effects on repeated F natural sextuplet demisemiquavers. Similarly, the grey thrush's descending harmonic calls are reminiscent of those of the principal bird in 'La Chouette Hulotte' (*Catalogue d'Oiseaux* no. V).

The bird choruses are underpinned by a rhythmic continuum on the metal percussion - four independent tâlas using irrational values - and a call from the Japanese bush warbler which, intermittently, is portrayed by a long duration in crescendo, followed by a rapid scandicus. All versions begin on a different pitch, but they all have this melodic shape and identical rhythm - the tritone is present once again. Played on the trumpet, this call is given notable prominence. In addition, the first and second bird choruses use almost all the same birds; although the birds' actual songs are varied constantly, the superimposition is the same. The third bird chorus (pp37-42) introduces the Japanese robin, red-flanked blue-tail, crown willow warbler, hawk cuckoo, Japanese grosbeak and stonechat.

The second movement that involves birdsong is number six, 'Les Oiseaux de Karuizawa'.

This movement also includes two piano cadenzas and features harmonic ostinato and rhythmic continuums in the same vein as before (Indian tree Pipit song) and the 'très rythmé - percuté sec dans le grave, aigre et criard dans l'aigu' sonorities of the great reed warbler [ex IX/16a, b, c]. Notable similarities are to be found between the 'Ô-yoshikiri'/Japanese great reed warbler's cadenza found here with its French counterpart, 'Rousserolle Turdoïde', found in the seventh movement of *Catalogue d'Oiseaux* [ex IX/16c, d] Here, the opening iambic rhythms in the bass and the two colour chords in the treble are almost identical in sonority and shape to those found in *Catalogue d'Oiseaux*. The two-part alternator (in bar 10 of the 2nd cadenza) is similar to the alternator of the French great reed warbler which is given the marking 'thrashed, clanking'/'râclé, bruit de ferraille'. The fortissimo spread chords in an iambic metre (bars 11-13) are also found in 'La Rousserolle Effarvate', although harmonised differently (pp108-109).

Again, the Uguisu (Japanese bush warbler) is featured throughout this movement in various guises. Although many of the birds used in movement three also appear here, it is the Japanese bush warbler's rhythmic shape - long duration followed by an 'éclatant' scandicus⁸ - that relates the two pieces so closely, as well as the fact that they both incorporate a piano cadenza. The Japanese bush warbler is usually represented by group 1 (woodwind section) with a trumpet [ex IX/17]. At other times, its appearances include the single trumpet, oboes and flutes (p111). Furthermore, towards the end of the piece, the Japanese bush warbler is pre-figured by flourishes from the woodwind section in a

climactic crescendo, joining the flute, first oboe, trumpet and trombone in a subsequent pianissimo trill. At figure 27, this makes way for a chordal tripleted alternator⁹ which is gradually slowed by the use of augmenting rests, concluding the movement.

The metallic percussion section adds to the sonorities made by the solo lines and the 'blocks' of instruments. These unique superimpositions provide inexhaustible possibilities for further timbres, accentuating the beauty of the exotic birds' vocalisations, especially with the xylophone, marimba and metallic percussion ensemble. All the textures enumerated by Shu-Sun are employed in this work which is based on such an unusual combination of instruments.

Couleurs de la Cité Céleste (1963)

Heinrich Ströbel requested Messiaen to write a work for three trombones and three xylophones. The composer accepted the task, while including several other instruments in order to produce a variety of timbre, and to support this unusual ensemble. Messiaen immediately saw the possibilities in the trombones for an apocalyptic sonority.¹⁰ Added to the brass instrumentation is a bass trombone, three trumpets, trumpet in D, and two horns in F. The three xylophones became xylophone, xylorimba and marimba, while it was thought that three clarinets would accentuate the subtleties of the aforementioned tuned percussion instruments. The piano is also employed, often with a percussive quality to match the xylophone-trio. Bells, cencerros, four gongs and two tam-tams combine with

these sonorities and - although the piece was written only one year after Sept Haïkai - often produce Gamelan effects [ex IX/18 - p49].

Messiaen takes five quotations from the Book of Revelation:

- 1 'a rainbow surrounding the throne' (IV, 3)
- 2 'and the seven angels had seven trumpets' (VIII, 6)
- 3 'to the star was given the key to the bottomless pit' (IX, 1)
- 4 'the light of the Holy City was like a jasper stone, clear as crystal' (XXI, 11)
- 5 'the foundations of the wall of the City were garnished with all manner of precious stones: jasper, sapphire, chalcedony, emerald...' (XXI, 19, 20)

Some of the colours are noted in the score in relation to certain harmonies. In addition to the programmatic nature and the source of inspiration of the work, Messiaen cites four plainchants, and includes them in the music. In fact, the most frequently employed plainchant, 'alleluia of the eighth Sunday after Pentecost' (mode six), is used on two occasions in almost Gregorian style. The following is a list of the four alleluias:

- 1 eighth Sunday after Pentecost - Magnus Dominus
- 2 fourth Sunday after Easter - Christus Resurgens
- 3 Corpus Christi (Holy Sacrament) - Caro Mea
- 4 feast for the dedication of the church - Aborabo

The first alleluia listed above is the most frequently used here, and for brevity, it is to be referred as Alleluia (8th P).

The list of jewels found in the last quotation from scripture stresses the importance given to colour associations, symbolically those of Celestial Jerusalem (Paradise). Indeed, the first quotation mentions the rainbow: Messiaen has often said that it is the omission of a tone in a full compendium of semitones that produces colour.

As in previous works, Messiaen also uses Greek and Sharngadeva (sp) rhythms, which form a rhythmic structure in the work, and permutation of interversions. The central section of the work, from figure 42, first combines interversions, deçî-tâlas rhythms and other 'groups' of material. It is these combinations of timbres and rhythms that create and intensify the contrasts and transformations of sonority. The Sharngadeva and Greek rhythms are dramatically opposed to the simple durations deployed in the colour chords and plainchants.

The form of the work is sectional. The three main sections are preceded by an introduction and followed by a coda. The introduction (pp1-5) introduces bird vocalisations, a short piano cadenza and the first statement of the alleluia (8th P). The first section (pp 6-21) displays birdsong, symmetrical arrangements of colour-chords, an alleluia (8th P), two quotations depicting 'the star that has the key to the bottomless pit' and 'like a flash of lightning that illuminates the sky', another piano cadenza (this time from the meadowlark), a refrain and the first phrase of the Corpus Christi alleluia. The middle section (p21-48)

displays raucous 'cries' from the bare-throated bellbird, and flourishes from the red-breasted toucan. The alleluia for the fourth Sunday in Easter is heard for the first time and a rhythmic t̃ala is superimposed upon permutations 13, 14 and 15. The third section (pp48-60) presents the alleluia (8th P) in various transformations. It is first found (1) as an introduction to the section, (2) with t̃ala (producing Gamelan effects in the instrumentation), (3) superimposed with the alleluia for the dedication, (4) with Sharngadeva motives, and (5) as a slow 'ecstatic' version, harmonised with colour-chords and fragments of t̃ala on the piano. The coda (p61-73) has further strophes of birdsong. A piano cadenza representing the stripe-backed wren opens this section, followed by a frenzy of polyphony superimposed on t̃ala and alleluia (8th P). The rest of the coda consists of a piano cadenza; representation of the chasm; refrain; reappearance of the symbolism of the abyss; flashes of lightning; and a concluding Corpus Christi alleluia in solemnity.

As in *Oiseaux Exotiques*, here Messiaen combines birdsongs from many parts of the world (New Zealand, Argentina, Brazil, Venezuela, Canada) which would not be heard together in the wild. Birdsong is included here for, as Messiaen put it, its 'intrinsic beauty and as a symbol of heavenly joy': for the composer, his Celestial Jerusalem (or Paradise) would embrace birdsong.

The birdsong is generally given to the clarinets, piano and xylophone-trio. In the Introduction, for example, the parson bird (New Zealand) is represented by sharp, accented chords on the three clarinets, by falling cluster chords on the piano, and by a combination of clarinets, piano and xylophone-trio. Before figure 2, the rising call is

coloured by cluster chords on the piano. The form of the parson bird's opening vocalisation is as follows:

bar	melodic shape/ other features	metre	instruments
1	high-pitched chirp	3/16	3 cl
2	falling clusters	double-iamb	pno
3	porrectus flexus	paeon IV	3 cl
4	scandicus	bacchius	xyl-trio
5	porrectus flexus, interruption call	paeon IV, iamb	xyl-trio, 3 cl & pno

However, the xylophone-trio also colours the clarinets' timbre in the vocalisations of the great kiskadee and, in the case of the yellowhead, they interact with the piano [ex IX/19a, b - p2, fig4 & p3, fig5]. The metallic percussion and xylophone-trio often manufacture Gamelan sonorities, reminiscent of *Sept Haikai*. At the beginning of the third section, where the alleluia (8th P) is superimposed on various Sharngadeva rhythms, the cencerros and tubular bells produce Japanese qualities due to the fact that the piano simultaneously plays 'stained-glass' effects and high-pitched cluster-chords. These sonorities are regularly in the background helping to produce colours such as green emerald and violet amethyst (p15), and interacting with the more regular western instruments.

Certain bird vocalisations are given full support by the orchestra. The bare-throated bellbird from Brazil is given chordal 'arraché, crié'/'snatched, cried' iambic calls at the beginning of, and periodically in, the second section. These calls are played by one, two or three clarinets accompanied by a trumpet in D, trumpets in Bb, horns, trombones, piano

and all the tuned percussion. Although no crescendo is marked, the second chord in each 'cry' is given emphasis by being higher in pitch and accented. It is important to note that the first cluster chord in the piano uses only white keys, while the second employs only black keys¹¹ [ex IX/20].

Five brief cadenzas are found at various stages in the work; as in previous pieces, the piano is the designated instrument. The five piano cadenzas are listed below:

(1) p2	fig 3	stripe-backed wren
(2) p19	fig 31	Western meadowlark
(3) p61	fig 80	stripe-backed wren
(4) p66	fig 86	Mexican tropical mockingbird
(5) p72	fig 97	Western meadowlark

In the first cadenza, the stripe-backed wren (1) is portrayed (at figure 3) using several motivic ideas - each feature designated a bar to itself - and with the indication 'sans battue'/'without pulse'. Two-part homophony is employed, together with the aforementioned scandicus cell (anapaest: demisemiquaver - demisemiquaver - semiquaver¹²) while, additionally, quick flourishes of cluster chords produce a vivacious, colourful song [ex IX/21]. This bird is also portrayed in the third cadenza (figures 80-81) at the beginning of the coda, page 61. Here, all the same features are deployed; however, deeply coloured chords are included. The Western meadowlark of Canada also has two

small cadenzas: (2), at figures 31-32 towards the end of section 1, and (5) at figures 97-98 before the final Corpus Christi alleluia which completes the work. The second of these cadenzas (p72) uses the same widely-spaced, four-part chords and similar flourishes as the first (p19), which - given the indication 'muffled' - comprises just three features, as follows:

- a) two widely-spaced chords
- b) single-line flourish
- c) anapaest (chordal)

The form of this cadenza is a permutation of the above features, thus:

- 1) a - b [rest]
- 2) c - a - b [rest]
- 3) a - c (extended) - b [rest]

[ex IX/22 - p19]

The other cadenza (4) is a representation of the Mexican tropical mockingbird at figures 86-87, after the frenzied polyphony of birdsong superimposed upon tâla and alleluia (8th P). Here, like many repetitive examples found in the piano cadenzas of *Oiseaux Exotiques*, the Mexican tropical mockingbird repeats the same colour-chord two or even four times, while the last phrase is a deeply enriched colour-chord alternator [ex IX/23].

The preceding polyphonic 'tour de force' represents the long-billed wren (1st clarinet), south island green kaka (2nd clarinet), yellow-rumped cacique (3rd clarinet), rufous-bellied thrush (piano), various tâla and the alleluia (8th P) superimposed on one another. Later, more birdsongs are introduced: some are replacements, but others are additions, most notably the three-part version of the takahe's song played on xylophone, xylorimba and marimba, and the rufous oven bird, which is given incessant triplet demisemiquavers, and also employs the xylophone-trio - creating further Gamelan effects.

In this work, Messiaen has said that the form 'depends entirely on colours'. Although it is useful to break the work up into sections (introduction - three sections - coda), it is the array of colours in Messiaen's 'Celestial City' that perhaps creates the greatest imaginative impact on the listener. The specific inspiration of the piece - the Book of Revelation - gives the work a mystical and visionary dimension, containing as it does dazzling apocalyptic apprehensions of colour, birdsong and plainchant.

Et Exspecto Resurrectionem Mortuorum (1964)

Messiaen originally intended this work to be performed in a vast open space - perhaps a large church or Cathedral, or even in the open air or amongst mountains. The simplicity of the piece - both the first section of Movement I and the last section of Movement V involve very simple durational values indeed - presents a strengthened monumental power. The piano and strings are left out completely; instead, the orchestration consists of

eighteen wind instruments, a sixteen-strong brass section - including six horns and a bass saxhorn in Bb - and an impressive percussion section.

The work is divided into five movements, each of which is preceded by a quotation from the Bible. There is very little use of birdsong. In fact, only two birds are mentioned in the score. The first is the Amazonian Uirapura (or musician wren) which appears twice in the third movement entitled, 'L'heure vient où les morts entendront la voix du fils de Dieu'/'the time comes when the dead will hear the voice of the Son of God' (St John V, 25). This particular species is said to be heard in the hour of death, and symbolises here an inner voice of Christ waking the dead from their rest, announcing the imminent resurrection. The movement is divided into two halves, each of which employs three elements:

1 uirapura outbursts

2 tubular bells - two sets of four notes (the second being a permutation of the first)

3 Tutti - brief, rapid - a tumultuous frenzy, overlapping with the pp-fff trill of gongs and tam-tam(s)

The Amazonian Uirapura's call is expressed through brief bursts of sound - a raucous succession of chords, short note values and quasi-glissandi in crescendo [ex IX/24 - p32].

The calandra lark¹³ appears in the fourth movement which is headed, 'Ils ressusciteront, glorieux, avec un nom nouveau - dans le concert joyeux des étoiles et les acclamations de fils du ciel...'/ 'They will rise again in glory, with a new name, and join the blissful concert of the stars and the acclamations of the Son of Heaven...' As is evident in the title, the calandra lark was chosen mainly, as Messiaen relates, for its chirruping, joyful qualities: this birdsong also symbolises 'celestial joy and one of the four qualities of the glorious souls, the "gift of agility"¹⁴ [ex IX/25].

Movement four is divided into six sections: each section is prefaced by three tam-tams playing three 'long' semibreves, falling in thirds - representing the Trinity, needless to say. The final linking group of three notes, however, is joined by six gongs: two-by-two, their staggered entries are also in minor and major thirds. The various vocalisations of the calandra lark are represented in two of the six sections. The simple form of the movement is as follows:

tam-tams 1) Easter Introit

tam-tams 2) Calandra lark

tam-tams 3) Easter Introit

tam-tams 4) Calandra lark

tam-tams 5) Easter Introit (with 'theme of the first piece', and tâla)

tam-tams (with six gongs) 6) forceful succession of semibreves - whole orchestra

The song of the calandra lark contributes a rhythmic vitality to an otherwise static set of chords. As its song symbolises the 'gift of agility', Messiaen writes a number of bars of varying length, all in a rapid tempo. With occasional exceptions, each bar is given a separate time-signature. At the tempo marking, 'Un peu vif' (semiquaver = 200), the first few bars of its first appearance present a semiquaver chord, anapaestic chordal flourish, double-iamb, two loud semiquaver chords, a high-pitched shriek and a chordal alternator all in the space of a couple of seconds [previous ex IX/25 - p48, s1, b1]. Messiaen cleverly and regularly divides high-pitched shrieks with harmonic alternators, as seen in the previous musical example. In addition, the second appearance of the calandra lark's song begins with two sets of three chords making up a cell: each chord has several notes played by most of the woodwind section. It has now become commonplace that a representation of a bird's song may need - in order to portray fully the colouration of its song - a number of instruments all playing different pitches. The dynamic song of the calandra lark is brought to life by the colour-chord complexities and the perpetual fluctuation of pulse at such a rapid speed. As Messiaen becomes more interested in colour associations, it is inevitable that his birdsongs are presented in a more highly developed timbral fashion.

Méditations sur le Mystère de la Sainte Trinité (1969)

The *Méditations* is the first major work for organ since *Livre d'Orgue* (1951). Here, Messiaen incorporates features commonly associated with his unique style: birdsong, religious symbolism, plainchant, the modes of limited transposition, Hindu and Greek rhythms, water drops, added note values and colour combinations. However, a new

compositional idea is deployed in the Meditations - 'le langage communicable'/'the communicable language'. Although Messiaen has admitted that it was a game, each note, beginning on the A above middle C, is assigned a letter¹⁵, while the remaining letters (I-Z) are allocated pitches both in fixed registers and with fixed durations. A musical feature is assigned to essential verbs, and to Latin cases given before nouns. In addition, the Trinity is given melodic and rhythmic features. These complicated rules make it possible for Messiaen to spell out passages from Saint Thomas Aquinas, albeit without adverbs, indefinite or definite articles, pronouns or prepositions.

The work is divided into nine movements, each movement eulogising an attribute of the three parts of the Trinity. Meditation I is dedicated to 'God the Father' and involves a substantial passage which employs the 'communicable language' outlining a portion of Saint Thomas Aquinas' 'Summa Theologica'. The second Meditation is devoted to holiness, opening with a plainchant in octaves, 'Alleluia de la Dédicace' - 'Dieu est Saint'/'God is Holy'. The form is divided into two equal parts, both of which use the same sections of material in the same order, ending in a coda. The form is shown below:

<p><u>Part 1</u> a) Plainchant and passage representing the holiness of Christ b) wren c) coloured chords d) blackbird e) chaffinch f) garden warbler cadenza g) blackcap</p>	<p><u>Part 2</u> a) Plainchant and passage representing the holiness of Christ b)wren c) coloured chords d) blackbird e) chaffinch f)garden warbler cadenza g) blackcap</p>
<p style="text-align: center;"><u>Coda</u> Plainchant, yellowhammer</p>	

The plainchant is written in octaves and in five phrases, the last concluding with repeated staccato A naturals. Both the passages representing Christ's holiness ('Gloria de la Messe') and the section I have entitled 'Colour chords' (en trio) involve many chords that are triadic, yet enclosing (for example) major 6ths, 9ths and 7ths - a device described in 'Technique de mon Langage Musical' when referring to very early works. The last chord in the first 'Presque Lent' section is simply A major in first inversion. Messiaen's resolutions are in the form of chordal complexes, followed by a colour chord. Here (p16, s4, b2), the top line (G natural-F natural) is stated and twice repeated before the final chord of the passage: this simple melodic cell is richly harmonised. It is interesting that the composer, in many cases, has resorted to earlier 'style oiseau'. The blackcap, for instance, is represented by a single-line texture accompanied by an A major chord with an added sixth (1st inversion) [ex IX/26]. If melodic and rhythmic characteristics are combined then its phrase (p19) may be characterised as follows: iamb - porrectus flexus (paeon IV) - porrectus - group of 5 - anapaest - iamb. Similar decorative birdsong is found in early pieces such as the sixth movement of the *Turangalila Symphony*, 'Jardin du Sommeil d'amour' or even in the *Vingt Regards sur l'Enfant Jésus*. Indeed, the garden warbler's cadenza is also in a single line texture in continuous demisemiquavers, occasionally broken up by a single semiquaver beat or rest [ex IX/27]. As in earlier works, the form is based upon juxtaposed birdsong rather than the superimposition of many bird vocalisations. The wren, however, involves - in a very short time - several different textures including a two-part alternator, jagged two- and three-part phrases (anapaest, bacchius), a two-part trill, two-part homophony and three sharp chords (homorhythmic) [ex IX/28]. The more innovative song of the blackbird is divided into two distinct textures. The first is a single-

line texture and the second involves a homorhythmic motive, a chordal trill and a two-part flourish which consists, most notably in its second appearance, of two chords, the first higher than the other, resulting in a 'twit-too' vocal shape. This falling shape is found on many occasions throughout the work [ex IX/29 - p22].

The third, brief meditation refers to a text by Saint Thomas Aquinas, and is the only movement to make use of the 'communicable language'. The right hand part, here, states the text, while, in Indian rhythms, the other two staves accompany it: the pedal part, like the top line, is monophonic and shows similar intervallic leaps, but the middle line is in two-parts continuously.

The fourth meditation is particularly important as it expresses the definition of God - God as 'I AM'. Messiaen cites the passage in Exodus where Moses asks to see Yahweh, but he replies, 'You cannot see me, for it would kill you, but I shall pass before you and cry out my name'. According to scripture, something passed before shouting, 'I am, I am', and this is duly noted in the score at the climax on full organ. In discussions with Claude Samuel, the composer explains that in order to create trepidation, he decided to employ 'strange' bird vocalisations, including the cries of the black woodpecker. Here, most of the birds' vocalisations take a prominent rôle; most imaginative is the composer's instruction for bizarre combinations of registrations - often blends of clarion and mixture. In addition, at the work's first performance in Washington, the organ there created quite a sensation, as Messiaen related a few years later in a platform discussion:

‘..in the fourth movement of the “Méditations” where the black woodpecker expresses his fear, I was able to make full use of the so-called “trompettes en chamade”, the trumpets pointing directly at the audience, which created a tremendous stir among the listeners.’¹⁶ [See ex IX/30]

The treatment of bird vocalisation in the fourth meditation is mostly through short calls. The ‘grand solo’ of the song thrush is built up of short, snatched rhythmic motives, and includes a quasi-glissando effect, marked ‘like silk tearing’, and ascending staccato colour chords marked ‘like drops of water’ [ex IX/31a,b]. The brash, densely clustered sonorities of the black woodpecker can only be described as ‘cries’, while again the short iambic cells of the ring ouzel may resemble ‘too-wit’ [ex IX/32]. The repetitive homorhythmic texture of Tengmalm’s owl is heard early on and, after the stirring climax at the end of the movement, a huge silence descends, followed by the owl’s reappearance on solo bourdon [ex IX/33a, b]. From *ffff* to *pppp*, Messiaen succinctly symbolises how small mankind is compared to the ‘dazzling light of holiness’.

The fifth meditation describes three divine attributes with precise musical themes. The first is ‘God is Infinite’, which is given to the 16’ bassoon¹⁷, low in its register - reminiscent of the pedal part in ‘Dieu Parmi Nous’ (*La Nativité*). The second is ‘God the Everlasting’, which is treated like flashes of colour, while the third, ‘God Unchanging’ is serenely scored on 16’ and 8’ foundation stops in the third mode of limited transposition. Another passage describes the Holy Spirit in an exciting toccata on manuals. Messiaen also describes the Father, differentiating between the ‘Father Omnipotent’ and ‘Our Father’.

Finally, a simple but paramount sentiment is struck - 'God is Love'. The piece concludes with the innocent repeated Dbs of the yellowhammer: with such simplicity, the composer projects cherished 'divine love'. It is this sweet, naïve song that completes meditations II, V, VIII and IX (at the end of the work - ex IX/34). As W. H. Hudson writes of this bird, it 'sings in the sultriest weather...silenc[ing] other voices so he will utter his monotonous chant on the gloomiest day'¹⁸.

Meditation VI is dedicated to the Son - 'In the Word was Life, and Life was light'. The movement is entirely based on plainchant themes. Interestingly, there are similarities to birdsong here: there are many repeated pitches in the 'Offertoire', while the 'Graduel' - on both occasions - is accompanied by a single chord, while diminished and perfect fifths are written above, in a style similar to that of the blue rock thrush's song from *Catalogue d'Oiseaux*¹⁹.

The seventh meditation is dedicated to the Holy Spirit. Here, words in the 'communicable language' are taken again from Saint Thomas Aquinas' 'Summa Theologica': 'The Father and the Son love through the Holy Spirit...themselves and us'. Leitmotifs are used repeatedly throughout the movement, representing Father, Son, Holy Spirit and the verb 'to love'. The birdsong is limited to a common bulbul in the top stave, which decorates the leitmotifs and phrases in the 'communicable language'. The song labelled 'oiseau de Persépolis' - appearing both in the introduction and coda - was heard by Messiaen at Persepolis in modern-day Iran: he was unable to get a glimpse of it in order to identify the species. It has now been identified as some kind of bulbul. Its song is highly repetitive, and

is written mostly in two-part homophony. The two-part chords at the beginning of its song form incessant paeon IV rhythmic cells. The penultimate phrase in its first appearance uses a sequence in which each rising cell (two notes) is followed by the same interval or - in the case of the left hand - a similar interval: each cell gradually descends. As demisemiquavers are used, this phrase has a glissando quality [ex IX/35].

The eighth meditation portrays one last attribute: 'God is One'. The opening plainsong, 'Alleluia de la Toussaint', is indeed direct in its close resemblance to the original chant. The simplicity of this single line gives the piece a feeling of archaic purity recalling similar monody in *Les Corps Glorieux*. At the close, a rising passage in diminuendo gradually adds notes to each chord, until the final semibreve (in the penultimate phrase) which consists of two pedal notes and a nine-part chord. This gradual ascending passage symbolises simplicity in its use of white notes only. In addition, the naïve, repeated semiquavers of the yellowhammer complete this meditation.

The final, ninth meditation arises from the preceding piece in its symbolic affirmation of the power of God, and reshapes previous musical elements from the whole work, especially from the second movement. One hears the opening 'Theme of God' in octaves and on manuals, a transformation from the original appearance on pedals only at the start of the fifth meditation; the garden warbler's animated cadenzas in Meditation II are recalled in an identical style. This final meditation is a climactic display of virtuosic toccatas, rapid encircling demisemiquavers and colourful flourishes interspersed with

equally lively birdsong and alleluias in a tumultuous glorification of the 'Theme of God'.

The yellowhammer's plaintive semiquavers conclude the entire work.

Although Messiaen here only uses one keyboard instrument, and much of the birdsong is written in a somewhat archaic fashion, the specified combinations of registrations produce extraordinary results, especially when complex colour chords are used. However, the composer here has employed birdsong as a major structural element in many of the meditations. The reappearances and transformations of themes and birdsong create a developmental and cyclic nature to his music. Additionally, the emergence of a striking theme, leitmotif or birdsong instantaneously begins a new section for both the listener and the analyst. Messiaen's use of varying small rhythms and melodic cells is a useful signpost for deciphering birdsong, especially when there are repetitive groups of cries or calls. The listener is also able to hear the different qualities of bird vocalisations due to the registration and range of each individual songster. This group of meditations is recommended to be performed as an entire whole, but each piece, although often brief, is self-sufficient.

La Fauvette des Jardins (1970)

In many ways, the piano piece *La Fauvette des Jardins* returns to the musical world of the *Catalogue d'Oiseaux*. Like several pieces in this earlier cycle, it is programmatic, outlining the course of night and day, beginning just before 4 am and finishing at about 11pm.

Messiaen illustrates these changes by expressing the changes of light (and the colourful

reflections on the water) with diurnal and nocturnal bird vocalisations. As in 'La Buse Variable', the composer's source of inspiration is Lake Laffrey, specifically the end of the lake, overlooking his beloved 1930's house in the Alps, at the foot of the 'bald' mountain of the Grand Serre. In order to show the location, the colours, trees, lake and birdsong in their full glory, the composer chooses the period from the end of June to the beginning of July.

Although there are several similarities to the *Catalogue*, this extensive work, lasting approximately forty minutes²⁰, uses to a greater extent the modes of limited transposition, chords of 'transposed inversions' and chords of 'contracted resonance'. In addition, Messiaen presents several long improvisatory solos of the garden warbler, showing its great dexterity and fluid virtuosity: in conversation with Claude Samuel²¹, it seems that he was very proud of the work.

The form of the work is governed by the use of colour chords which portray the changes of light and the depiction of the landscape. Messiaen divides the piece into several sections - 4am, 5am, dawn, afternoon, evening, night - although there is little indication of these subdivisions in the score. The work begins before 4 am with three themes: night, undulations of water and the barren-faced mountain of the Grand Serre. The next section is heralded by the homorhythmic, cretic rhythm of the quail and is followed by abrupt flourishes of the nightingale [ex IX/36a, b]. The representations of distant trees and nightingale are interspersed with the three previous themes and a sumptuous figuration

involving a sustained chord and high-pitched thirds portraying the alder trees at the fringe of the great lake.

Dawn is presented by extremely calm colour chords displaying the pink lake at dawn (p4).

This is the first of six colour-chord interludes using chords of transposed inversions. There are three phrases here: the third is the shortest (four bars), while the first two (six bars each) are exactly the same, except that the second is transposed down a tone [ex IX/37].

It is interesting to note that the first colour chord in the first phrase is exactly the same as the first chord in the piano accompaniment in 'Liturgie de Cristal' from the *Quatuor pour la Fin du Temps*, while the third chord is exactly the same as the fifth chord in this same sequence. The resolution of this first phrase involves two crotchet chords, the first being C major in its first inversion and the second being Eb major with an added sixth. The period between 4 am and 5 am presents the garden warbler in four fleeting solos, hidden amongst the ash trees, willows and bushes surrounding the lake. There are also various restatements of the chromatic opening 'night' theme amongst abrupt high-pitched clusters, 'victorious' alternators of the nightingale and twinkling sonorities of the wren. In the brisk solos of the garden warbler, continual demisemiquavers are employed. There are, however, occasional pauses that richly harmonise two falling pitches in a quasi-cadence [ex IX/38]. These quasi-cadences are similar in nature to the tawny owl's calls in the *Catalogue d'Oiseaux* (no.5) or its appearance later in this work. In the *Catalogue d'Oiseaux*, explained earlier in this chapter, the monotonous falling third C-A is richly harmonised, creating a 'hollow', 'hooting' timbre. These two pitches are again richly harmonised near the close of this work; however, in the first two solos of the garden

warbler, the two-note cells B-F (p8), G-C# (p10) and E-Bb (p11) are used. These are all tritones. Towards 5 am (p12), the sun rises and one almost smells the wild mint and the green grass as the blackbird sings briskly, interrupted by the repeated harmonic ostinato of the green woodpecker who erupts with laughter, similar strophes by the chaffinch with chordal alternators and 'jubilant', ecstatic phrases of the skylark, whose prominent shrill note is the B natural [ex IX/39a, b, c]. The garden warbler has a new, long inventive solo (pp14-18) overlapping right and left hands with great effect, exploring the high register of the piano.

Later in the morning, a storm threatens to break out above the lake, now striped with bands of green and violet. Once again, there are three phrases in the interlude, only here the third is greatly extended. The third becomes more and more emphatic, leading into an extended version of the Grand Serre theme. The chaffinches sing, exchanging harmonic ostinatos and alternators with swift, chuckled endings [ex IX/40]. At this point there follows the great reed warbler whose gnashing, 'grated' voice interchanges high-pitched calls with low, 'dry' rhythms [ex IX/41].

The sun returns, however, with the 'coulé, doré'/'slurred, gilded' passing calls of the golden oriole, enriched with harmonics. The main part of the day (pp21-41) is saturated with long solos by the garden warbler interrupted by occasional brutal 'croaks' from the carrion crow, short, snatched cries from the golden oriole and harsh, 'dry' alarms from the red-backed shrike. Also in this section, the black kite (p25) is depicted by repeated calls 'comme un hennissement' ('like a whinny'), and the flight of the swallows is also

represented (p33); but it is the flight of the black kite that heralds the mid-afternoon [ex IX/42 a, b, c, d]. This section (pp44-47) is a development of its earlier calls: its flight is portrayed by the ascending and descending patterns in the pitches, contrary motion dissonances and, in a passage marked 'même mouvement', semiquavers begin at the bottom of the piano and gradually ascend to the top, suggesting the black kite's encircling spirals in the sky. Once at the top, the chordal complexes overlap with one another for several bars, representing the orbits growing narrower and narrower with the twisting of its tail.

As the black kite descends and hits the water, Messiaen introduces a short colour-chord interlude describing the 'calm, ecstatic' lake. This time, now in the mid afternoon, the lake takes on every shade of blue - peacock, azure and sapphire. The final two chords in the sequence, however, both rest on A major with an added 6th in 1st inversion, coloured by the single repeated note of the yellowhammer with its harmonics²². In the hot sun, we hear a prolonged plagal cadence where, at first, the goldfinch complements a D major 6 chord [ex IX/43] (IV) with two-part homophony, followed by A major with the repeated pitches of the yellowhammer. Messiaen also uses five superior resonances on colour chords in a short section, illustrating the blue sky and the gilt-green of the mountain.

As night falls the abrupt homorhythmic ostinato cries of the green woodpecker continue, followed by a contrasting A major added 6th chord (1st inv.) with flute-like strophes of the blackcap, marked 'lumineux, sans hâte'. The nightingale announces sunset (p52) with two colour-chords, an ascending anapaest and a harmonised scandicus followed by harmonic

ostinato; the chord (E-Bb-Eb) is built from a tritone, perfect fourth and diminished octave, all intervals featured regularly throughout the colour-chord interludes [ex IX/44]. Sunset is also portrayed by four densely harmonised chords with fermatas: in their 'ecstatic contemplation', they present the red, orange and violet tinges of the sun at this time. The night darkens as its winding quaver theme is reinstated, followed by the 'hooting' calls of the tawny owl - reminiscent of its appearance in *Catalogue d'Oiseaux* [ex IX/45].

Messiaen also represents the lake in the moonlight by another colour-chord interlude, concluding with four bars of settling music. The first three bars comprise two chords in each. The first is a major chord in first inversion and the second is a minor chord in first inversion: F - F minor, D - D minor and A - A minor. The fourth bar, however, displays quiet superior resonances. The black silhouettes of the alder trees are depicted with a final statement of the Grand Serre, concluding the piece.

Most impressive are the long solos of the garden warbler. These are enriched with colours, the hands overlap, and the full range of the piano is utilised. In addition, a great fluidity is achieved by continual motion. The changes in tempo in the same song or call seem to bring alive many vocalisations. The nightingale's gradual diminution of duration in a 'lent' tempo marking (p8) is suddenly interrupted by 'vif' clusters. In the garden warbler's long solos, too, are pauses produced by (1) rich harmonisations of two notes (as described earlier), (2) rests, and (3) chords which are left to resonate. Resonance effects are used in this work to the full. The expression 'laissez résonner' is often written into the score, and it is with the ensuing texture that the unique harmonics are produced from the resonance. In fact, even when this expression has not been indicated, many chords (invented or

triadic) accompany or immediately precede elaborate bird vocalisations, thereby creating fascinating resonance effects.

Messiaen also includes several interludes that represent the lake, in 'renversements transposés' colour-chords. The birdsong here is linked perfectly to the time of day. The other non-birdsong material provides the setting for the landscape, thereby working in parallel with the birdsong. Messiaen has mentioned how pleased he was by the piece, being a development from the *Catalogue* in its use of 'renversements transposés', 'resonance contractée', and displaying fluidity in the garden warbler's virtuosic and lengthy solos. However, the composer hints at earlier compositional elements. The Grand Serre theme and the cretic rhythms employ the added note value, triadic chords are used frequently for an often calming effect, while modes two and three (p48) are deployed in many chords and occasionally in two- or three-part homophony, or even in monody.

Des Canyons aux Étoiles (1971-1974)

Des Canyons aux Étoiles was commissioned by the patroness Miss Alice Tully and was premiered at the Alice Tully Hall in New York. The work consists of twelve pieces, thus:

No. of Movement	Title	Translation	Focus
Part 1 1	'Le Désert'	'The Desert'	desert
2	'Les Orioles'	'The Orioles'	birdsongs/calls (1)
3	'Ce qui est Écrit sur les Étoiles'	'What is Written in the Stars'	stars (1)
4	'Le Cossyphe d'Heuglin'	'White-browed robin'	birdsongs/calls (2)
5	'Cedar Breaks et le Don de Crainte'	'Cedar Breaks and the Gift of Awe'	Cedar Breaks
Part 2 6	'Appel Interstellaire'	'Interstellar Call'	stars (2)
7	'Bryce Canyon et les Rochers Rouge-Orange'	'Bryce Canyon and the Red-Orange Rocks'	Bryce Canyon
Part 3 8	'Les Ressuscités et le Chant de l'étoile Aldébaran'	'The Resurrected and the Song of the Star, Aldebaran'	stars (3)
9	'Le Moqueur Polygotte'	'Northern Mockingbird'	birdsong/calls (3)
10	'La Grive des Bois'	'Wood Thrush'	
11	'Omao, Leiiothrix, Elepaio, Shama'	'Hawaiian Thrush, Leiiothrix ²³ , Elepaio, Shama'	birdsong (4)
12	'Zion Park et la Cité Céleste'	'Zion Park and the Celestial City'	Zion Park/Paradise

Employing a diminished orchestra (at least half the size of that used in his symphony), Messiaen still manages to produce monumental and grandiose sonorities. Woodwind and brass are complemented by glockenspiel, xyloimba, tubular bells, gongs, various cymbals, temple and wood blocks, crotales, a small string section (six violins, three violas, three cellos and a double bass), solo piano and horn. Further, he uses two unusual instruments for the first time. The first is the 'éoliphone', a wind machine, representing the sounds of the air. The second, the 'géophone' or sand machine, portrays the sounds of the earth. Moreover, three different chimes made from wood, glass or shell play a specific rôle in the piece, producing dramatic effects, as does the thunder sheet (tôle). The many unique orchestral combinations that can be produced from such instruments give limitless variety; however, Messiaen, over and above, includes copious extended techniques. The cellos (for example) are asked to scrape their bows behind and alongside the bridge, representing the blue grouse in movement five; in this same movement the red-shafted flicker is portrayed by indeterminate pitches on the violins and violas marked 'arpège à 4 cordes, entre chevalet et cordier'. In addition, the trumpet uses various mutes and plays with mouth piece only, while the crotales, unusually, are occasionally played with a bow. Many harmonics are employed on the strings, in combination with double-stopping. At the end of the eighth movement (for instance) septuplet demisemiquaver harmonics are deployed in glissandi²⁴, and similar effects are found in the song of the wood thrush in movement ten. Another example is the western meadow lark's song which is occasionally notated without harmonics, although they are sometimes implied. Messiaen relates:

'Its song is incredible, very limpid, with many harmonics. Each note carries five or six harmonics; it is one of the greatest songbirds of the United States.'²⁵

There are many birds represented in *Des Canyons aux Étoiles* that do not appear in any other work. This is partly coincidence; nevertheless, there are certain birds that are only found in the three places that the composer cites for his inspiration. Messiaen transcribed birdsong from three specific places in Utah. The first place is the deserted and wild 'Bryce Canyons', where, apart from the birdsong, the huge red/orange and even violet-tinged rock formations were of particular fascination to the composer. Here, the Western tanager is portrayed by three notes that, in the wild, may be described onomatopoeically as 'tiot, tiot, tiot'. In contrast, the blue grouse has a deep voice, 'wuh, wuh, wuh', while the Clark nutcracker has a horribly harsh voice. The second location, 'Cedar Breaks', is not as vast as Bryce Canyon, but even so it is like, as Messiaen advises, a huge 'amphitheatre' with 'spires and dungeons'. Messiaen has said that the most beautiful birdsongs are to be found in the third setting, 'Zion Park', which symbolises Paradise. For instance, the aforementioned Western meadowlark with its many harmonics, the virtuoso piano solos of the cassis finch, and the grey vireo with its 'co mo co mo' sonorities all appear here.

Birdsong is used extensively in this work, yet its prominence is shared equally by three other significant features. In conversation with Claude Samuel, the composer describes the work as 'astronomical', displaying the vastness of the depths from the canyons to the stars; 'geological', being a homage especially to the immense rocks of Bryce Canyon; and 'theological', being associated with praise and contemplation and devoting itself to the

Celestial Jerusalem (Paradise). Equally, it is an 'ornithological' work, bringing together birds from all over the world. There are fifty-nine birdsongs gathered from North America, many from Africa, birds from Japan, Australia and the Hawaiian Islands, the Chinese thrush and red-billed mesia (*leiothrix*) from China, the shama from India and the magpie robin from Madagascar.

As shown in the above table, each movement is mainly preoccupied with one of the four issues: geological, astrological, theological or ornithological. There are five movements dominated by birdsong.

'Les Orioles'/'The Orioles' (movement two) describes, as is implicit in the title, many vocalisations of these particular species. Many orioles are represented here: notably, the orchard and Baltimore orioles (piano solos), Scott's and bullock's orioles (*xylorimba*) and the hooded/Lichtenstein's orioles (mainly on woodwind), while the olive-backed thrush is also found. The movement opens with a piano solo representing the orchard oriole.

Messiaen has stressed that there is a difference between the American orioles' songs and the European 'Golden Oriole', *Le Lorient*, a bird found in many of his pieces including *Réveil des Oiseaux*, *Chronochromie*, *Catalogue d'Oiseaux* - where it is the title of the second piece - and in the later *Fauvette des Jardins*. Nevertheless, it is evident in the piano interludes of 'Les Orioles' that there are many characteristics similar to those found in 'Le Lorient' in the earlier *Catalogue d'Oiseaux*. Most notable are the two slow chromatically coloured chords which sink in resolution, creating a calming effect: the second phrase ends with a sumptuous resolution to a G major chord with an added sixth. Messiaen has said

that the golden oriole's song creates a powerful sense of joy, emanating from its predominant use of the major key, although it is usually represented in E major²⁶. It is important to note, however, that colour chords are used regularly in a contrasting fashion where a chord rises to a higher one, usually with an accent - in this case the effect of an often harsh, dramatic 'call' is created. In this movement, the structure involves an interchange between piano interludes, other luscious modal harmonies (tutti), special glissando effects and harmonics in strings - most of which depict birdsong. The aforementioned luscious modal harmonies are harmonically reminiscent of the sixth movement of the *Turangalila Symphony*²⁷ ('Jardin du Sommeil d'Amour'). Features of the music correspond to an earlier Messiaen style, notably in the shapes and lengths of many phrases, the added note values and the modal quality of the harmonies enriched with clusters that resolve into triadic chords with added sixths or ninths. In these orchestral sections the birdsong is used decoratively - again in a 'Jardin du Sommeil...' style - and played by the xyloimba rather than, as in most other instances, on the piano. The movement displays the wide variety of the orioles' songs and calls in terms of rhythm and their multi-coloured sonorities.

'Le Cossyphe d'Heuglin'/'The White-Browed Robin' (4) is a piano solo which represents this south-east African's birdsong. This solo movement does not come as a shock to the listener as Messiaen has built up a number of special effects that symbolise, and often sound like, various instruments in the orchestra. Here no mention is made of orchestral instruments, but the growling ostinato chords in the bass produce timpani effects, while the elaborate harmonies are representational of an orchestral tutti. 'Le Moqueur

Polygotte’/‘The Mocking bird’ (9) is more than double the length of the earlier piano solo. This later piano solo is an advance upon the earlier *Catalogue d'Oiseaux*-influenced movement. Messiaen employs copious interesting effects: notably, alternating clusters on white and black keys, long quasi-glissando effects representing the superb lyrebird, harmonic ostinato, and cluster-chords played with the palm of one’s hand and even with both arms. Near the opening, trills are heard; in joyous fashion, this sets up the piece for elaborate but fragmented chordal alternators and repeated rhythmic cells. The piece has less continuity than one would expect, possibly resulting from his use of many extended techniques while at the same time contrasting rhythmic and melodic motives. However, the mockingbird is in fact a ‘counterfeit bird’ - one which imitates others - and this quality is achieved by perpetual variation. Although the piece appears fragmented, it displays the full gamut of ‘style oiseau’ effects possible on a single piano. Many changes of tempo are specified. In comparison with movement four, where only the white-browed robin is depicted, six different species are here represented: variety is found in the northern mocking bird’s song, colour chords in the golden whistler, many features of the superb lyrebird²⁸ and, in a short concluding section lasting one page, the Australian magpie, Prince Albert lyrebird and grey shrike thrush are first introduced. The movement concludes with a superbly colourful superior resonance.

‘La Grive des Bois’/‘The Wood Thrush’ (10) is presented by the whole orchestra. The most prominent motivic feature is an inverted arpeggio used in two different ways throughout the movement. The first version is slow and solemn, played on the flute, horn, one bell and éoliphone, while the second is quick, involving rapid demisemi-quavers on

flute, glockenspiel and xyloimba, ascending chromatic harmonics on upper strings, and often concluding with éoliphone and crotales that linger beautifully after the other instruments have finished. The movement symbolises 'man deformed by himself' - man who has made himself wicked will eventually be magnificent again after resurrection. The serene music of the horn represents the magnificent man, while the 'deformed' music is characterised by light-hearted, vivacious themes. These rapid sections - with harmonics and lingering high-pitched resonances on crotales - are exciting and very colourful, tinged with glittering silver, although Messiaen has not labelled it as such. Due to the triadic nature of the main theme, many simple chords are employed throughout this magical movement and, towards the end of the piece, slow and immense chords are played by the whole orchestra in the style of the first movement of *L'Ascension*.

This is contrasted with the eleventh movement, 'Omao, Leiothrix, Elepaio, Shama' - a difficult piece which perpetually changes tempo and beat. The four birds in the title are employed with other birds from the United States and Hawaii. The omao and elepaio are from the Hawaiian Islands, the leiothrix (or red-billed mesia) is from China, and the shama - prominent in *Chronochromie* and *La Transfiguration de Notre Seigneur Jésus-Christ* - is from India. The structure involves four verses with refrain, a long piano solo (omao) and recapitulation. The brilliance of the birdsong, played on many combinations of instruments, is enriched by the dynamism of varying speeds and metre. There is a heterophonic superimposition of songs from the desert warbler, kubitaki²⁹, little green bulbul, spotted morning warbler and dark-backed weaver, all accompanied by harmonics in the strings. The kubitaki's song is found in the clarinets, while the desert warbler is

represented by one piccolo. Later on in the movement the blue jay is depicted in two contrasting manners. The first is a short piano solo employing four descending chordal flourishes, while the second uses the whole orchestra. Similarly, the African bou-bou shrike is portrayed in violent *ff* chords in the brass (*ff-pp*). The music builds up to a climax leading into the last movement, 'Zion Park et la Cité Céleste', which symbolises Paradise. This final movement begins with a chordal texture played on woodwind and brass, again alluding to the first movement of *L'Ascension*: by this stage this feature has almost become cyclic in this work. Messiaen's style at this point displays some of his early conventional characteristics in its harmonies, especially in the use of major keys: the music often hints at A major, principally with the constant use of mode three. Additionally, the vesper sparrow and Lazuli bunting are represented early in the movement as decoration, on the glockenspiel and xylorimba. It is this occasional simplicity here that once again creates grandeur and a sense of finality in Paradise: the close, resolving into an A major chord on solo strings (*ff*), flutes and brass fading away, is almost inaudible. The birdsong is colourful, innovative and forward looking, and yet more birdsongs are being introduced into the aviary.

Saint François d'Assise (1975-84)

In 1975, Olivier Messiaen was invited by Rolf Liebermann to write a work for the Paris Opéra. Messiaen finally agreed to this request and began composing an extensive opera, which was to take him three years to write and a further three to orchestrate. This opera,

or 'musical spectacle' as Messiaen prefers, consists of eight tableaux (scenes) divided into three acts, thus:

Act 1	1st Tableau	'La Croix'	'The Cross'
	2 nd Tableau	'Les Laudes'	'Lauds'
	3 rd Tableau	'Le Basier au Lépreux?'	'The Leper Kiss'
Act 2	4 th Tableau	'L'Ange Voyageur'	'The Journeying Angel'
	5 th Tableau	'L'Ange Musicien'	'The Musical Angel'
	6 th Tableau	'Le Prêche aux Oiseaux'	'The Sermon to the Birds'
Act 3	7 th Tableau	'Les Stigmates'	'The Stigmata'
	8 th Tableau	'La Mort et la Nouvelle Vie'	'Death and New Life'

Messiaen's description of this work as a 'musical spectacle' is indeed apt, as features often associated with traditional opera are not found here: there is no overture, nor arias in the conventional sense, but, more importantly, rather than unfolding dramatic narrative, Messiaen has chosen to present a series of 'mysteries' or significant 'pictures'. The opera might in fact be seen as a latter-day oratorio - Messiaen at first contemplated writing a passion, but thought himself not worthy of the task. For the composer, however, St Francis was a man who had the closest affinity with Christ. In his life, he endured poverty, and adhered strictly to the vows of humility and chastity; he even suffered from the

agonising affliction of stigmata. Needless to say, Messiaen deeply admired the ascetic St Francis, reading copious books on the subject and taking especial inspiration from St Francis' 'Canticle of Creatures', the 'Fioretti' and 'Considerations of the Stigmata' (both by anonymous Franciscans), and from Holy Scripture. There is also the obvious point that St. Francis' traditional association with animals and especially birds would be likely to make a powerful appeal to the composer. The opera traces Francis' spiritual development and surveys his inner toils: as the composer advises, 'the progress of grace in the soul of a Saint'.

Messiaen made a special trip to New Caledonia in order to broaden the geographical spread of his birdsong representations. The songs of the gerygone (fan-tailed flyeater) and philemon (New Caledonian friarbird), for example, are only found in this opera, and he uses the largest orchestra and chorus in any of his works. Interestingly, at its first performance, Messiaen was denied such huge forces for logistical reasons: the orchestra could not be accommodated on the stage. This new depth of instrumentation enhances certain birdsongs; indeed, unusual combinations are employed and, in addition, the ondes martenot returns to Messiaen's music. There are three ondes: the first is positioned on the left hand side of the stage, the second on the right, and the third centred in front of the conductor. The ondes has almost infinite possibilities of timbre, attack and dynamics, and the composer uses this flexibility to the full, quite unlike the slow solo lines deployed in the *Turangalila Symphony*. These special effects are often used when colouring other blocks of sound, while its low register is able to generate frightening sonorities.

The orchestra is as follows:

7 flutes (3 fl., 3 picc., 1 alto)
 3 oboes
 1 cor anglais
 7 clarinets (3 Bb, 2 Eb, 1 bass, 1 contrabass)
 3 bassoons (1 double bassoon)
 7 horns
 5 trumpets (4 Bb, 1 D)
 4 trombones
 3 tuba
 large percussion ensemble
 3 ondes
 large strings section
 géophone and éoliphone

Throughout the eight scenes, Messiaen presents several cyclic themes which symbolise the emergence of a specific character or dramatic sentiment. Five themes are associated with St. Francis: there is a principle melodic theme on violins (1); a cluster followed by a chord on the trombones, demonstrating solemnity (2); an energetic 'decision theme' often involving descending double octave leaps (3); a 'theme of joy' on xylophone, woodwind and D trumpet (4); and (5) the song of the ubiquitous blackcap (or capinera). Further, every other character is identified by a theme (and periodically birdsong), which alters according to the dramatic or theatrical setting. The seven main characters are: St. Francis, the angel, the leper, and the four friars Leo, Masseo, the dissident Elias and the Saint's dearest companion, Bernardo.

Birdsong plays an important rôle in the dramatic structure of each scene. The angel is represented by seven flutes, shrieks on the oboe and clarinet high in their registers, and by

harmonics, while the gerygone (fan-tailed flyeater), with its staccato articulation alternating between piccolo and glockenspiel with xylophone, heralds the imminent arrival of this special character. The leper is portrayed by a 'dochmaic rhythm' (iambic and cretic - short, long, long, short, long) incorporating intrusive complex rhythms with cluster chords that exemplify the character's exasperated resentment of his ghastly condition. When the leper is cured, however, this theme is transformed and re-orchestrated into a 'dance of joy' with tubular bells, while the blue rock thrush is reproduced on the xylophone-trio with accents, trills on strings and cymbals. Brother Leo has his own song for a theme using, as he does, the words 'I am afraid on the road...', taken from Ecclesiastes; while Brother Masseo is intimated by simple melodic phrases supported by chords of 'transposed inversions'. The eldest character, Brother Bernardo, also has a melodic theme on horns and strings, and the song of the philemon (New Caledonian friarbird) on woodwind often accompanies his appearances. In contrast, Brother Elias is portrayed by harsh glissandos on the strings and trombones, the gloomy sonorities of the notou³⁰ and the erratic, disturbed rhythms of the reed warbler. These differing musical features symbolise Elias' *modus vivendi*, with his love of money and luxury.

The first act is concerned with St. Francis' initial understanding of spiritual perfection. The song of the skylark opens the opera on the xylophone-trio in three-part homophony, accompanied by bells and suspended cymbal. This Balinese sonority is heard throughout the work. There are, in fact, several songs of the skylark in the first scene. Its second appearance is multi-layered on woodwind in lavish harmonies. The third and fourth versions are Balinese (as is the first), while the fifth is interspersed with statements from

brother Leo and high-pitched screeches from the little owl. The sixth variant is a multi-layered polyphonic section. The Balinese-trio begins this section and acts as a musical core: in staggered entries, the woodwind section follows in superimposition with many colour chords. The woodwind occasionally stop, leaving the xylophone-trio on its own. This exciting passage ('un peu vif', semiquaver = 200) precedes the conclusion of this first scene.

The second scene is announced by two sets of bells and complex colour-chords. Here, Messiaen depicts life in the monastery. St Francis desires saintliness, and prays to God asking to meet a leper in order to love the person and override his disgust. After a series of harmonics and pizzicato effects, the blackbird's song is heard in short, repeated calls. The blackbird also employs flourishes on woodwind tutti, as does the blackcap, but it is the song of the garden warbler that is of notable prominence. Using the xylophone-trio, many compound intervals are employed, and most phrases begin with repeated pitches, recalling the skylark's song in the first scene.

The third scene describes the 'leper kiss'. The scene opens with brief, disjointed calls of the Ural mountain owl. Messiaen intimates the 'horror of leprosy' with a contrabass and ondes martenot low in their registers. The leper is painfully unreconciled to his predicament, and it is the brass section that helps to display this emotion. However, when the leper is cured the music is transformed. There is a long silence, followed by simple white-note harmonics. He then shouts, 'Miracle!' Both men are filled with joy, the blue rock thrush is represented on the xylophone-trio and accompanied by multi-layered

stringed trills on a C major chord with an added sixth, and (for example) repeated pitches are employed in jubilant passages. It is a double miracle: the leper is cured and Francis becomes a Saint. The motive of the blue rock thrush, often in the dochmaic rhythm (iambic + cretic), is written in the third transposition of mode 2, and is added to the theme of joy played by the trombone, high woodwind and xylophones. As the leper's dance concludes with trills on the strings, the blue rock thrush is depicted by cluster chords on the xylophone-trio.

Act Two also consists of three scenes. The first scene represents the travelling angel, and opens with a musical introduction presenting the themes of the characters involved here, specifically, Brother Bernardo with the philemon's song, Leo's song, Masseo's theme and features associated with Brother Elias (string glissandi, notou and the assiduous rhythms of the reed warbler). The gerygone (fan-tailed flycatcher) announces the entrance of the angel and concludes the scene in mockery. Scene five presents the angel playing the viol to St. Francis, and the music - his first insight to the Celestial City - proves too much for the Saint, who promptly faints. Set in La Verna, this scene employs unique sonorities in the birdsong. The soft theme of the gerygone, for instance, is heard on two occasions. Its treatment is semi-aleatoric: the birdsong is given a sign from the conductor and is played thereafter *ad libitum*. Jagged, high-pitched phrases are played on the glockenspiel, accompanied ethereally by female voices on an A major 6 chord (p58). The falcon's cries are produced by a homorhythmic texture on the woodwind and brass in continuous semiquavers, pre-empting a provocative section later in the scene comprising several superimposed blocks of homorhythm (p79-85). It is common for Messiaen to use

orchestral blocks in isolation; but here the sonorities of the strings (gerygone), piccolos (two ostérops and Hôaka), second oboe and small clarinet (blackcap) and flutes (garden warbler) are superimposed upon each other. Another exquisite effect is found in the gerygone's song which is accompanied by 'viol' glissandos on strings using a combination of harmonics and resonance effects.

The sixth scene of the opera, 'The Sermon to the Birds', is the most important with regard to its deployment of birdsong; it is also the longest, lasting approximately forty-five minutes. It is divided into seven parts beginning with an introduction.

This introduction begins with the skylark's solo on the xylophone-trio; there follows a superimposition of birdsong in staggered entries and mostly in *hors tempo*: mistle thrush (solo clarinet), blackcap (third ondes and first piccolo), blackbird (first flute), song thrush (first ondes), uguisu (temple blocks, cello, double bass pizzicato, second ondes) and later, the chaffinch (three violins, réco-réco and trumpets) are played together. St. Francis and Brother Masseo enter in part 1 where the songs of various European birds are introduced by the Saint. An array of unique effects and musical characteristics is displayed by each bird, especially the turtle dove. This bird's song is represented by frequent flutter-tonguing on the flutes and clarinet, and by ondes glissandos played on the ribbon and a tremolando effect on its fingerboard. The xylophone, flute, clarinet and stringed percussion identify the wren, while the robin has a quiet, delicate melody with descending scales and more glissandi. The capinera (blackcap of Assisi) here is always entrusted to the whole woodwind section with a suspended cymbal. After the 'decision theme' and 'joy theme'

(associated with St. Francis) are stated and developed upon, birds from New Caledonia are presented. St. Francis, after tasting the blood of the dragon, is able to understand and interact with the birds. Part 3 is a concert of birdsong containing four garden warblers, a chaffinch, birds from Morocco and Sweden (piccolo, flute, oboe), mistle thrush, cuckoo (trumpet and horns) and wood pigeon, while part 4 returns to the two aforementioned themes of St. Francis. He then steps forward to deliver his Sermon. The Saint advises the birds about the many gifts they have received from God - their plumage, wings and migration. The birds are silent; only the blackcap interrupts sporadically. St. Francis asks the birds to thank God, and he then blesses them. When Francis has finished, there is an enormous upheaval as a high-spirited second concert erupts with the skylark's xylophone-trio texture, followed in turn by a garden warbler and a second skylark, this time in woodwind chords. The birds disappear in part 7 as Brother Masseo approaches St. Francis and advises him not to forget the good example that the birds have given him.

Interestingly, we hear more songs, most notably from the golden oriole on woodwind with delicate cluster chord glissandos on strings, and a counterpoint played on two ondes representing the blackcap and blackbird. Still more effects are being introduced to 'style oiseau'.

'The Sermon to the Birds' is a development from the *Épôde* in *Chronochromie*. Greater freedom is produced by several solo instruments and orchestral blocks being in *hors tempo*³¹ and by constant changes of metre involving bars with the demisemi-quaver as a common denominator, 3-2-3/32 (for example). Additionally, the *Épôde* only used solo strings. Here, in a polyphonic fashion, the whole orchestra is brought into play.

The third act is the shortest, comprising two brief scenes. Scene 7, 'Les Stigmata', begins at night. The movement as a whole represents the ascetic Saint and his horrible condition of Stigmata. Birdsong is used symbolically. The owl's frightening cries, other chordal clusters and the descending motion of the woodwind create an eerie effect. Later, the black and grey colours of the mode of timbre, duration and intensity produces more feelings of anguish. Later, soft E major chords accompany the chordal songs of Christ while ascending chords represent the path to Eternity. Scene eight, 'Death and New Life', begins with an introduction to the themes of St. Francis. All the brothers are present watching him dying on the ground. St Francis says his farewells to time, space, Mount La Verna, his dear brothers, the city of Assisi and, lastly, to the kestrel and blackcap. The Saint sings the last stanzas from the Canticles of the Sun, and the gerygone reappears on the xylophone and glockenspiel announcing the arrival of the angel. The bells toll as he dies. Enormous climactic sonorities are produced by complex chords in the orchestra in crescendo, and gradually they ascend, becoming more frantic. The spot-light on the stage becomes increasingly bright, almost blinding, and the chorus concludes with the words, 'from sorrow, from weakness, and from shame, he brings to life power, glory and joy'.

Livre du Saint Sacrement (1984)

The organ is reinstated as an important instrument for the composer in this mystical cycle devoted to the blessed sacrament, comprising eighteen movements and lasting approximately two hours. The entire work has a theological scheme. The first four meditations are acts of devotion before the invisible Christ in the blessed sacrament;

meditations five to eleven describe specific, enigmatic events in Christ's life (Christ's mysteries), while the final seven meditations (12-18) are prayers for the present, concerning transubstantiation³² and the Holy Communion.

Here, new birds emerge from the Holy Land in 'Le Dieu Caché' (meditation three) and, with the exception of the nightingale and the melodious warbler, all the other birds in the work as a whole are new, gathered from the Middle East. In 'Le Dieu Caché' the Tristram's grackle and the Olivaceous warbler's songs are positioned between simple plainchant monody and slow chordal textures. The strophes of the Tristram's grackle are effectively indistinguishable on both its appearances. Its song is treated either chordally or in two parts, centring on E major. In fact, the first two chords of its first two calls (p15) are E major in second inversion. Additionally, the ensuing two-part texture (p15, b8) contains the following harmonic cells: G# - E, E - B, C# - G# and D# - A#, most pitches being in the triad or at least in the scale of E major, while in the left hand, one of the subsequent chords is a complete E major triad [ex IX/46 - p15]. Although the whole tone cell G# - A# is found here, many references are made to E major and the notes of its scale, even in the bird's final appearance in meditation fifteen. The second of its songs begins and ends with this same chord. The two appearances of the Tristram's grackle in Meditation III may be categorised as follows:

- 1st Song: cretic (b1) - cretic (b2) - paeon IV, iamb, paeon IV (b3) - bacchius, cretic (b4)
 2nd Song: cretic (b1) - cretic (b2) - iamb, anapaest, 3 flourishes, cretic (b3)

The Olivaceous warbler, however, is written in two-part staccato semiquavers and demisemiquavers throughout. The hands are often more than an octave apart, producing

mostly compound minor and major 3rds, and compound minor and major 2nds [ex IX/47].

The piece is firmly established in E major. In addition to the Tristram's grackle's tonality, the first 'chordal' section ends in the dominant (B major), the second in E major (with a major 6th), and the final chord in the third, brief chordal section - concluding the piece - is E major.

In the sixth movement, 'La Manne et la Pain de Vie', these large intervals in two parts recur in two sections devoted to the desert lark [ex IX/48]. These curious vocalisations are based, with the exception of occasional flourishes, upon two features - the iamb and the anapaest. The most frequently recurring of these features is the iamb. Retrogradation is frequent, and major 7th and augmented octave (or minor 9th) intervals are used constantly. Throughout this movement, birdsong is heard alongside symbolic aspects of the desert, including a chordal trill representing the wind (p43), reminiscent of the grasshopper's trill in 'La Rousserolle Effarvate', *Catalogue d'Oiseaux* [ex IX/49]. The mourning wheatear, also in two parts, uses smaller intervals and a two-part descending flourish (p38).

The two common birdsongs not taken from the Middle East have contrasting rôles. The nightingale in movement eight ('Institution de l'Eucharistie') merely supplies decoration with its isolated B naturals, major 7th alternator and trill. In contrast, the melodious warbler has two extensive solos in the thirteenth movement, 'Les Deux Murailles d'eau'. The previous iambic cell is harmonised at the opening of its song ('too-wit'). There follow three further features: two-part homophony, a variation on the opening bar using

alternative colour or cluster chords, and repeated chords in a harmonic ostinato similar in style to the kestrel of 'L'Alouette Calandrelle' (*Catalogue d'Oiseaux*) [ex IX/50a, b - p96-97]. The second of its solos, or indeed cadenzas (p101), deploys even tighter cluster-chords [ex IX/51]. These solos, with the song of the clamorous reed warbler, are in virtuoso style, as are the cascades of contrary motion arpeggios in the section marked, 'Les vagues dressées'/'the parted waves', and other passages portraying the water divided in the Red Sea and the presence of Christ in the broken Host. The birdsong here is so integrated that one is often unable to distinguish one song from another.

Of notable importance is the fifteenth movement, 'La Joie de la Grâce', which consists entirely of the enthusiastic strophes of three different birds - the yellow-vented bulbul, Tristram's grackle and the white-throated robin. The simple block form of the piece involves six sections and a coda. Each section presents a song from each of the birds, in the order given above. The first section treats these songs briefly, while each successive section gradually increases the length of the songs. In addition, the yellow-vented bulbul's song is always the shortest, followed by the grackle and white-throated robin, whose final song runs for three-and-a-half pages. This process of gradually extending the songs and phrases of birds is the basic premise behind the structure for *Un Vitrail et des Oiseaux* (1986): in many works Messiaen develops short rhythmic and melodic cells as the pieces progress. Both the yellow vented bulbul and the Tristram's grackle are in two part homophony, and often sound rather fragmentary. The yellow-vented bulbul's song (for example) is broken up by numerous rests: even in its final, more elaborate state in section

six, the number of notes before each rest is, at the most, ten. The yellow-vented bulbul varies its metre throughout, as shown below:

Yellow-Vented Bulbul Songs in 'La Joie de la Grâce' (rests are marked with a '-' sign)

1 st Song (p119)	epitrite II
2 nd Song (p120)	ionic minor - paeon IV (porrectus flexus)
3 rd Song (p122)	epitrite II - iamb, paeon IV (porrectus flexus)
4 th Song (p123)	epitrite III - ionic minor, flourish - cretic
5 th Song (p125)	epitrite II - bacchius, paeon IV - cretic
6 th Song (p128)	bacchius, paeon IV - ionic minor, triple-iamb - epitrite III, flourish - paeon IV - single note - paeon IV (porrectus flexus) - bacchius, tribach + cretic - single note - iamb

The phrases of each bird also become gradually longer: by the sixth section, the Tristram's grackle has many longer passages, including one (p129, s3) that contains two complex flourishes in an elaborate, drawn-out phrase [ex IX/52a]. The iamb, cretic and paeon IV metres are present throughout these sections [ex IX/52b]. The song of the white-throated robin is recognisably elaborate, containing repeated chords in fourths (hinting at quartal harmony), the paeon IV and iambic rhythms, short four-note cells in two-part sequences, some of which use white notes in one hand and black in the other, and many other flourishes.

The coda reintroduces the cretic rhythms of the Tristram's grackle followed by a two-note cell of the white-throated robin, gradually descending and leading into a two-part alternator, a feature already seen in the fourth and sixth section of this piece. The meditation displays the regular feature of stating a bird's song as a source and then gradually developing it, lengthening the phrases, creating a fully-fledged version towards the end of the movement.

The last movement - the triumphant, ecstatic eighteenth - spells out 'La Joie' in the communicable language. Toccatas, tumultuous ostinato sequences and flourishes eventually lead into chromatic ascending scales and abrupt cluster-chords. In the work, the birdsong seems to have provided a structure for each piece, giving - with the unmistakable timbres - clear points of reference. Where colour-chords have not been included, Messiaen has relied on characteristically unusual combinations of organ registration to produce these unique timbres.

Petites Esquisses d'Oiseaux (1985)

In this short piano work Messiaen allows the songs of four European birds to be heard in isolation. Here Messiaen excludes almost all other compositional material: the birdsong is left on its own, only periodically punctuated by colour-complexes of the renversements transposés or resonance contractée-type. Moreover, this deceptively simple group of pieces comprises six portraits of birds' songs unaccompanied by the usual indications of surrounding species or habitat, and lacking the Greek or Hindu rhythms or other features associated with the *Catalogue d'Oiseaux*. The six pieces are as follows:

- 1 'The Robin'
- 2 'The blackbird'
- 3 'The robin'
- 4 'The song thrush'
- 5 'The robin'
- 6 'The skylark'

As is immediately evident, the songs of the robin are displayed in pieces I, III and V, divided by musical portraits of the blackbird (II), song thrush (IV) and skylark (VI). Each of the three pieces dedicated to the robin employs the same musical features. In fact, all the birdsong portraits are written in block form - that is to say, juxtaposed - where one musical texture is given a couple of bars, followed by another, and so on.

The three robin pieces consist of a number of different phrases. The robin, itself, is often written in two-part homophony, in 'vif' or 'modéré' demisemi-quavers. This birdsong is also represented by three-part homophony in a slow tempo marked 'un peu lent'. A most prominent characteristic is the composer's technique of isolating white notes from black. The unique quality of the quasi-glissandos that so often accompany the robin's strophes in other works is produced here on the piano in many sections marked 'vif'. At this rapid speed, the effect is just like a glissando: black and white notes are assigned to a specific group of notes, while each hand alternates between these groups of black and white notes³³. Messiaen describes this motive as a 'cascade of pearls' or as 'little drops of water', harking back to its appearance in 'Le Loriod' from the *Catalogue d'Oiseaux*³⁴.

The first glissando of 'Le Rouge Gorge' (I), for example, is written with black notes in the right hand - in groups of five - and white notes in the left [ex IX/53]. Many instances of this segregation can be found in the *Catalogue d'Oiseaux*. In addition, occasional bursts of birdsong are accompanied by white-note cluster chords [ex IX/54 - p4, s5, b2]. Like that of 'La Chouette Hulotte' in *Catalogue d'Oiseaux*, there are many examples of a simple two-note melody which is deeply coloured. Here the two notes G# and F# occur sporadically in the pieces dedicated to the robin, lavishly harmonised and in a quasi-resolution [ex IX/55 - p4, s4, b1]. As seen in *La Fauvette des Jardins*, this device is called 'resonance contractée'. Three colour chords are also used throughout the three robin pieces to punctuate the birdsong. These three colour chords - the third being the most infrequent - are written in several different transpositions. Johnson labels each one a, b and c and assigns them a number 1-13. 1 refers to the lowest root C# below middle C, and 13

is its 13th transposition, C# immediately above middle C. The right hand shows similar shapes to the colour-chords in *La Fauvette* and many other pieces - three-part chords involving tritones, perfect fourths and fifths. These chords of 'renversements transposés' are distinctly slow, in simple quavers and in groups of one to six, and provide the pieces with a sense of structure and produce exciting resonance effects with the ensuing high-pitched birdsong.

'Le Merle Noir'/'The Blackbird' (II) has only three separate features: colour chords with added time values, the song itself, and widely-spaced chords producing resonance effects [ex IX/56a, b, c]. Messiaen begins the piece with colour complexes in a chordal texture. The first two phrases are related, the second repeating the first two chords and concluding with two new chords, followed by a triadic harmonic resolution (b4). Each of these sections in the piece concludes with a resolution of this kind. On this first occasion, only white notes are employed in the chord. In the last colour chordal section, a simple C major with an added sixth is used. Interestingly, the added time value is employed here, recalling an early style of the composer. These sections are always followed by rapid demisemiquavers in two-parts, representing the song: indeed, the notes from the resolution are left to resonate here, just as so often in the robin's pieces. The blackbird's demisemiquaver phrases are brief, involving many flourishes and concluding with short scandicus or iambic cells. The third feature begins with a cluster chord using extremely low pitches, followed by a six-part chord in which the top three notes stand out. In each occurrence, the immediately preceding music has been left to resonate, and, therefore, an inferior resonance effect is created by the bass cluster and a superior resonance produced

by the six-part chord. The form of 'Le Merle Noir' may be divided into four verses, all comprising the three above-mentioned components in the same order.

The fourth piece, 'La Grive Musicienne'/'The Song Thrush', is a fine example of repetitive juxtaposition of musical features. Messiaen exploits the song thrush's characteristic short cells and repeats them once, twice or even three times. Again, there is no development, nor are technical procedures employed, only the composer's transcriptions are applied to create the structure. With the use of dense chords, followed by additional features, many unique resonances are achieved. However, a new tempo marking is not given to each characteristic feature. Amongst various repeated cells are ascending two-part quasi-glissandos (b47), homorhythmic ostinatos (b62), a repeated motive involving an ascending flourish to an A major chord (b27-28), a two-part alternator (b35), and three isolated colour chords (b18) [ex IX/57a, b, c, d, e]. The rest of the movement uses two or three repetitions of varying rhythmic features - iamb, cretic, epitrite III, bacchius, paeon IV or anapaest.

'L'Alouette des Champs'/'The Skylark' (VI) is the most lively and vivacious piece of the work. Again, it is built upon many ostinatos; in this case, numerous short cells are repeated frequently, often four or five times. The most common feature is a group of three demisemi-quavers in two-parts, in a high-pitched descending arpeggio: examples are found at bars 10, 18, 47, 59, 66 and 78, most of which are preceded by a chord in the middle range of the piano [ex IX/58]. Indeed, the other high-pitched two-part homophony found here is also pre-figured by a similar chord or occurs as a continuation of the

aforementioned descending arpeggio. These rather solemn chords punctuate the rapid, virtuosic two-part writing, as do the colour chords in harmonic ostinato (bars 20, 50, 91-92 and 103). The last three sounding colour chords in harmonic ostinato (bar 103) are followed by a turbulent group of clusters that bring the work to an enthusiastic end. Gradually descending, this faster sequence involves, at first, chordal and single note alternators in the right hand and single perfect fourth/tritone alternators in the left. A sequence begins in which the alternators gradually descend chord-by-chord and pitch-by-pitch [ex IX/59]. Two 'vif', abrupt calls conclude the work in the bass.

Un Vitrail et des Oiseaux (1986)

'Les Oiseaux sont plus importants que les tempi, et les couleurs plus importantes que les oiseaux'³⁵

The prominence which Messiaen gives to colour in this piece is immediately evident. The work uses several of the composer's favourite combinations of instruments to produce an array of colourful effects: in many ways it shows, in its simplicity, the influence of earlier works. The simple block form presents five different textures, of which two are closely related. The introduction represents the nightingale with the xylophone-trio accompanied sporadically by metal percussion, a texture also found throughout the opera and in *Couleurs de la Cité Céleste* [ex IX/60]. Accompanied by the woodwind section, the 'très lent' trumpet theme is written in 2/8 and 3/16, using only quavers and a semiquaver added-note value, completing the phrase with two tied crotchets. As the rhythm is very

simple, and it is only the semiquaver that shifts the quaver beat, the rhythm irresistibly recalls earlier Messiaen, notably the opening of 'Danse de la Fureur, pour les Sept Trompettes' from the *Quatuor pour la Fin du Temps* [ex IX/61]. As Paul Griffiths points out³⁶, the music is not only a chorale, but also a song. The trumpet and bells theme is richly coloured by the whole of the woodwind section, similar to the 'Corpus Christi Alleluia' of *Couleurs*. All three appearances conclude with the tritone ostinato cell, G to C#, in a quaver-semiquaver rhythm. The song of the chaffinch is also represented on the xylophone-trio and is answered by the song of the blackcap. In short bursts, its song is richly harmonised with colour-chords on tutti woodwind and trills on a triangle [ex IX/62]. Each note is given a separate colour-chord, displaying *la luminosité* of the bird's timbre. Its phrases gradually lengthen on each occurrence and the song itself increases in duration. Indeed, with the exception of the chaffinch's song, all the sections extend; however, the music does not develop in any traditional way, but instead the same motivic characteristics are simply repeated and elongated.

All three polyphonic sections begin and end with the garden warbler on the piano. After the piano has played two initial colour chords and begun to portray the garden warbler's rapid demisemiquavers, other birds follow in staggered entries on the flute and clarinet. Each instrument is given a down beat and thereafter plays in *hors tempo*. In fact, these sections may be referred to as 'chamber' versions of the continuous 'free time' heterophony found in the 'Sermon to the Birds', the sixth scene of Messiaen's opera. Three birdsongs are presented in the first polyphonic section, five in the second and seven in the third. It is interesting that such vivid colours are here employed, yet only common

birds are represented: perhaps Messiaen has decided that even the common birds of Europe have complex timbres.

Although the title, 'A Stained-Glass Window and Some Birds', seems to give the birds an almost peripheral rôle, in fact the piece is dominated by birdsong, as Messiaen seems to be evoking the progressive extension of a given bird's song as the day unfolds, using the same rhythmic and melodic features throughout. In the case of the polyphonic sections, Messiaen suggests through staggered entries the gradual intensification of birdsong as the morning passes, or as birds land on a tree. The composer uncages the birds in *hors tempo*, so that they are more free to interact with one another, although maintaining the characteristics of their songs. However, Messiaen, in contrast to the 'Épôde', uses only flutes, clarinets and a piano rather than solo strings; each instrument is designated to one bird's song. In the final polyphonic section Messiaen encapsulates three garden warblers on three instruments - piano, third flute and first clarinet. The third flute has many descending runs similar to the quasi-descending glissandos of the robin on the third clarinet; however, each solo line manages to maintain its intrinsic qualities. The robin's glissandos (for example) spring out of the texture as they descend to the lowest pitches used in these sections [ex IX/63].

The form of the piece is shown below:

INTRODUCTION	Nightingale on xylophone-trio and metal percussion
STROPHE 1	a) theme on trumpets b) chaffinch on xylophone-trio c) blackcap on woodwind d) Hors Tempo Polyphony - garden warbler (pno), blackbird (1 st fl), subalpine warbler (1 st cl)
STROPHE 2	a) b) c) [extended] d) Hors Tempo Polyphony - garden warbler (pno), blackbird (1 st fl), blackcap (2 nd fl), subalpine warbler (1 st cl), robin (2 nd cl)
STROPHE 3	a) [extended] b) c) [extended] d) Hors Tempo Polyphony - garden warbler (pno), blackbird (1 st fl), blackcap (2 nd fl), garden warbler (3 rd fl), garden warbler (1 st cl), subalpine warbler (2 nd cl), robin (3 rd cl)
CODA	i) nightingale on xylophone-trio ii) 4 phrases:- 1-3 = trumpet themes in succession, 4 = colour-chords + mode 1

La Ville d'En Haut (1987)

At the beginning of the work, Messiaen cites two quotations from Scripture:

'Recherchez les choses d'en-haut, là où se trouve le Christ'/'Seek those things which are above, where Christ sitteth [on the right hand of God]' [Saint Paul, Epistle to the Colossians, Chapter 3, v.1]

and,

‘ Et je vis la Cité Sainte, qui descendait du ciel, d’auprès de Dieu’/‘And I saw the Holy City, coming down from God out of Heaven’ [Revelation, Chapter 21, v.2].

Both quotations reveal the composer’s intention to create a vision of the Celestial City. In *Couleurs de la Cité Celeste*, there are five quotations from the Book of Revelations, one of which focuses on seven trumpets. Here, in the same way, the composer mentions the melody of the trumpets when referring to the second chorale, thus achieving again an apocalyptic quality.

In this simple work in block form, written for orchestra and piano solo, Messiaen represents two main aspects of the new life. The huge, monumental crotchet chords on the woodwind and brass portray the glory of Paradise in what might be called a ‘monumental chorale’, while the three separate textures of birdsong symbolise the joy of the resurrected. There are two chorales in the work. The first chorale is the aforementioned ‘monumental chorale’ (1), written in simple crotchets in densely orchestrated, grandiose tutti chords. The second chorale (2) employs many changes of time-signature in order to accommodate the frequent use of added note values (sixteenth): it is also accompanied by the glockenspiel and piano that together play a high-pitched five- or six-part homorhythmic texture, reminiscent, in style, of the piano part in the ‘presque lent’ section of the second movement of the quartet (‘Vocalise, pour l’Ange qui Annonce la Fin du Temps’).

The structure of the work may be divided into two sections, succeeded by a central birdsong section and a coda. The first two sections are exactly the same, each comprising three components: chorales 1 and 2, followed by the song of the melodious warbler. This song is given to the ubiquitous xylophone-trio texture in continuous three-part homorhythm. Its repetitive song, using short rhythmic cells, employs the same orchestration as the short vocalisations of the chaffinch in the immediately preceding work, *Un Vitrail et des Oiseaux*, although the melodious warbler's song is more rhythmically dynamic. Bars of 2 3 2/32 and 3 2/32 are interspersed with simple repeated notes (in harmonic inflection) in bars of 4/16 and 2/16, creating an exciting sense of freedom. Its song opens in the same way as previous versions by Messiaen [ex IX/64]. In *Réveil des Oiseaux* (p11), its second phrase begins with a similar rising, 'désagréable' pattern - iambic cells, the first a grace note and the second accented. This rising iambic cell of the melodious warbler is again found in the thirteenth movement of *Livre du Saint Sacrement* (pp96 and 101). In the fifth volume, part 1 of 'Traité de Rythme, de Couleur, et d'Ornithologie' (p577), Messiaen explains that its song is often built up of several parts: the first is a 'prelude', displaying the aforementioned iambic cells, while the second is a strophe often beginning with paeon IV followed by extensions of this cell. Further, the melodious warbler imitates the reed warbler - with its repeated pitches at a slower tempo - and the skylark with rapid virtuosic flourishes [ex IX/65a, b]. Its 'grande coda' is similarly virtuosic and at a more rapid tempo than the other musical material. Here, the melodious warbler has a similar 'prelude' and repeated pitches (p4, s2, b1-2), and has the added colourations being played by the xylophone-trio. Its song certainly has the excitement of

the skylark's; yet, although its second appearance is extended, there does not appear to be a comparably virtuosic ending.

After the first two sections, comprising the three aforementioned components, there is a central section which alternates the songs of two birds, the blackcap and garden warbler. Each birdsong is heard five times. The blackcap is orchestrated in almost exactly the same way as its appearance in *Un Vitrail*, but, in contrast, its rhythmic groupings are at first more sporadic. However, its song and phrases gradually lengthen until the fifth version (pp22-23) where one phrase encompasses nine notes. The blackcap, frequently used in the opera in a similar fashion, introduces the garden warbler, just as it does in *Un Vitrail*.

The garden warbler's song is long and 'chattering' in style, broken up by dense colour chords often in five or six parts - a technique found in many representations of this bird's song. These are indeed shorter versions of the cadenzas found in *La Fauvette des Jardins*. However, unlike the example in the piano part of *Un Vitrail*, here the 'chattering' passages are mostly in two parts. Each song is gradually extended, up to and including the fifth version.

The coda consists of the first, 'monumental chorale', followed by an extended version of the second, 'accompanied' chorale.

The structure of the work is as follows:

<u>Section 1</u>	a) chorale 1 ('monumental')
	b) chorale 2
	c) song of the melodious warbler
<u>Section 2</u>	a) chorale 1 ('monumental')
	b) chorale 2 (extended)
	c) longer version
<u>Birdsong Section</u>	[Five alternating passages]
	i) blackcap (woodwind)
	ii) garden warbler (piano)
<u>Coda</u>	a) chorale 1 ('monumental')
	b) chorale 2 (extended)

Notes to Chapter IX

- ¹ Although rarely noted in the score, often a note-value may resemble an exact colour association.
- ² Claude Samuel, Olivier Messiaen: Music and Color: Conversations with Claude Samuel, trans E. Thomas Glasow, (Portland, Oregon, Amadeus Press, 1986), p136.
- ³ Claude Samuel, op. cit., p132-3.
- ⁴ Almost identical to its representation in *Catalogue d'Oiseaux*.
- ⁵ The information here refers to the piece in general. The 'Épôde' - being a movement that comprises only solo lines in 'free' polyphony - is an exception.
- ⁶ Notably in the 5th and 6th bars of the second chorus.
- ⁷ This melodic shape is a particular feature of the whole work and, indeed, of Messiaen's 'style oiseau' throughout his career.
- ⁸ The Narcissus flycatcher includes a similar harmonised choriambic motive marked 'gai, coloré' (p75, b2), although not in a scandicus shape.
- ⁹ Comprising mostly falling and rising minor 3rds and major 2nds in groups of twos and threes.
- ¹⁰ Although the original quotation from Revelation, VIII, 6 states trumpets - see second listed quotation.
- ¹¹ The only exception to this rule is the first call of figure 49 - the opposite applies.
- ¹² Also in augmentation or diminution.
- ¹³ It is important not to confuse 'alouette calandre' ('calandra lark') with 'alouette calandrelle' ('short-toed lark').
- ¹⁴ Claude Samuel, op. cit., p141.
- ¹⁵ The German musical system is applied, where Bb = B and B natural = H.
- ¹⁶ Taken from a Platform Discussion on June 11, 1972 in the Bach Hall of St. John's Church, during the second Düsseldorf Messiaen Festival - cited by A. Rößler in her book, Contributions to the Spiritual World of Olivier Messiaen, (Duisburg, Giles and Francke, compiled 1986).
- ¹⁷ Used regularly by Messiaen.
- ¹⁸ Taken from W. H. Hudson's book Birds and Man, cited in A Wandering Voice by Michael Waterhouse (London, Bellow Publishing, 1996), p49.
- ¹⁹ See 'Le Merle Bleu' (p6) from *Catalogue d'Oiseaux*.
- ²⁰ Peter Hill's performance lasts just over thirty-two minutes.
- ²¹ Claude Samuel, op. cit., p153.
- ²² As seen throughout the 'Meditations'.
- ²³ Also known as the red-billed mesia - see *Chronochromie*.
- ²⁴ Of course, the inclusion of strings makes it possible to have real glissando effects.
- ²⁵ Cited by H. Watts in her article 'Canyons, Colours and Birds', Tempo 128, (1979), p6.
- ²⁶ Olivier Messiaen, Traité de Rythme, de Couleur, et d'Ornithologie, Vol 5, part 1 (Paris, Leduc, 1999), p448.
- ²⁷ In fact, according to Oliver Knussen, and rightly so, 'The Resurrected and the Song of the Star, Aldebaran' is a 'paraphrase' of this same movement in the *Turangalila Symphony*. See Tempo 116, March 1976, pp39-41, in his review of *Des Canyons aux Etoiles*.

²⁸ Employs many features similar to the northern mockingbird.

²⁹ Narcissus flycatcher.

³⁰ A type of pigeon.

³¹ Near the beginning of the scene, strict tempo and *hors tempo* divide the orchestra into two parts. The woodwind, strings, bells and xylophone-trio are conducted, while the three ondes, D trumpet, horn-trio, rattles, glockenspiel and vibraphone play at their own speed.

³² In fact, Movement XII is entitled 'La Transsubstantiation'.

³³ A few exceptions are found in the glissandos where black and white notes are not set apart, but only occasional single pitches are found in an alien group.

³⁴ See *Traité*, op. cit., p147.

³⁵ Taken from Messiaen's preface to the score.

³⁶ *Messiaen Companion*, ed. Peter Hill, (London, Faber, 1995), p513.

Conclusion

This thesis has surveyed the evolving treatment of birdsong throughout Messiaen's career, discussing his works chronologically, and focusing on the following issues:

(1) Selection of Species (2) Instrumentation (3) Timbre (4) Special Effects (5) Texture (6) Rhythm and Melody (7) Authenticity

There is a progressive development in Messiaen's treatment of birdsong, traceable from *L'Ascension* (1937) through to his last works. The following charts indicate significant features of this development: the compositions are divided into several stages as described in the thesis.

A - Significant Early Works

Date	Piece	Innovations in Representation and Treatment of Birdsong
1933	L'Ascension	* frequent trills and repeated rhythmic cells in movement II
1935	La Nativité du Seigneur	* rhythmic freedom of 'Dieu Parmi Nous' * repeated 'iambic feet' in 'Les Anges'
1936	Poèmes Pour Mi	* fluttering/chattering effects on the piano * high-pitched 'chirps' and 'interruption calls' * cluster chords * regular use of high-pitched sonorities
1941	Quatuor Pour la Fin du Temps	* phrases 'comme un oiseau' & 'oiseau' used for first time * blackbird and nightingale in 'Liturgie de Cristal' * 'machine-gun' effects (nightingale) * 'scandicus' melodic cells (nightingale) ¹ * tritone alternator * regular use of grace notes * movement entitled 'Abîme des Oiseaux' * rhythmic freedom (including added-note values)

1943	Visions de L'Amen	<ul style="list-style-type: none"> * implied sonorities of bells and birdsong * many cluster chords * bird-like 'interruption calls', also in succession * loquacious demisemiquaver patterns
1944	Vingt Regards sur l'Enfant-Jésus	<ul style="list-style-type: none"> * decorative and soloistic rôles of bird style * sonorities of larks specified * short sections devoted to 'le merle et tous les oiseaux'
1945	Harawi	<ul style="list-style-type: none"> * use of two synchronous key signatures (Eb major with atonal birdsong) * varied use of articulation
1946-8	Turangalîla Symphony	<ul style="list-style-type: none"> * piano depiction of birdsong intensified by orchestral accompaniment * 'cretic' rhythms * regular use of reference points in 'style oiseau' * piano cadenza with many bird style characteristics

B - The Experimental Period

Date	Piece	Innovations in Representation and Treatment of Birdsong
1950	Messe de la Pentecôte	<ul style="list-style-type: none"> * juxtaposition of bird style with 'droplets of water' * superimposition of bird style on 'drops of water' * organ registration creating new timbres * specified and unspecified birdsong
1951	Livre d'Orgue	<ul style="list-style-type: none"> * birdsong centre of attention in 4th movement * conversations of monophonic birdsong * first birdsong cadenzas * birdsong distinguished by timbre/registrations as well as melodic/rhythmic characteristics * 'continuous motivic islands'² * superimposition of rhythmic interversion of chromatic durations on birdsong in 'Soixante-Quatre Durées' * birdsong mostly specified
1951	Le Merle Noir	<ul style="list-style-type: none"> * song of the blackbird is the nucleus for musical inspiration * flute represents birdsong

C - Réveil des Oiseaux and Oiseaux Exotiques

Date	Piece	Innovations in Representation and Treatment of Birdsong
1953	Réveil des Oiseaux	<ul style="list-style-type: none"> * all birdsong now specified * only piece to make exclusive use of birdsong * use of 'circadian' time-scale * first employment of onomatopoeic instructions * several birdsongs depicted from all over France * harmonies used to colour songs and calls * harmonic ostinato * heterophonic polyphony of birdsongs * birdsong portrayed by whole orchestra
1956	Oiseaux Exotiques	<ul style="list-style-type: none"> * unpitched and pitched percussion used * Greek and Hindu rhythms used in conjunction with birdsong * homophony on piano * homorhythm on piano * colour-chords on piano * rapid changes of tempo * long polyphonic sections (tutti of birdsong) * quasi-glissando effects on piano * 'crossed hands' and overlapping on piano

D - Catalogue d'Oiseaux

Date	Piece	Innovations in Representation and Treatment of Birdsong
1956-8	Catalogue d'Oiseaux	<ul style="list-style-type: none"> * portraits of birdsong * depicting surrounding species, habitat and natural features * specific colour associations * meticulous pedal markings * homophony (one voice dominant) * homorhythm (one voice or hand dominant) * 'hybrid' textures³ * 'superior' and 'inferior' resonance effects * complex colour chords used in many songs * flights of birds portrayed * overlapping of hands * subjective responses to sound qualities added to score * counterpoints/polyphonies * solos/'cadenzas' of one species' songs

E- Selected Works from the Period 1960-1987

Date	Piece	Innovations in Representation and Treatment of Birdsong
1960	Chronochromie	<ul style="list-style-type: none"> * birdsong from Sweden, France, Japan & Mexico * 'Épôde' - 18 solo strings in continuous polyphonic birdsong tutti * harmonies and harmonics on strings producing 'cascades' of colours * colour associations added to score * equal emphasis on (1) interversions (2) birdsong * pizz. in strings * juxtaposed orchestral groups or blocks * metallic percussion
1962	Sept Haïkaï	<ul style="list-style-type: none"> * Oriental sonorities from xylophone, marimba and various metallic percussion instruments * many Japanese birdsongs * solo lines given to marimba, piano and xylophone * specific positions given to whole orchestral ensemble * six orchestral groups * bird choruses underpinned by rhythmic continuum
1963	Couleurs de la Cité Céleste	<ul style="list-style-type: none"> * xylophone-trio * piano has percussive rôle * some birdsongs supported by whole orchestra * equal importance given to colour, birdsong and plainchant
1964	Et Exspecto Resurrectionem Mortuorum	<ul style="list-style-type: none"> * specific use of brass section (excluding strings and piano) even when depicting birdsong * complex colour associations more important to the composer (shown in the calandra lark's songs)
1969	Méditations sur le Mystère de la Sainte Trinité	<ul style="list-style-type: none"> * even more innovative organ registrations * use of Messiaen's 'communicable language' to offset birdsong
1970	La Fauvette des Jardins	<ul style="list-style-type: none"> * particular, extensive focus on the garden warbler's songs * improvisatory qualities of the song * 'renversement transposés' & 'resonance contractée' colour chords
1971-4	Des Canyons aux Étoiles	<ul style="list-style-type: none"> * first use of 'wind' and 'sand' machines to accentuate birdsong timbre * use of chimes made from shell, glass and wood * crotales

		* extended techniques (including cellos scraping bows and many mutes used)
1975-83	Saint François d'Assise	* dramatic use of birdsong, cyclically or symbolically * first use of 'hors tempo', in 'The Sermon to the Birds' * ondes martenot used experimentally
1984	Livre du Saint Sacrement	* reverts to mostly juxtaposed material * gradual development of birdsong characteristics throughout movement
1985	Petites Esquisses d'Oiseaux	* 4 miniature portraits of birds' songs in isolation * only occasional triadic or colour chords used to break up phrases
1986	Un Vitrail et des Oiseaux	* birdsong phrases gradually develop throughout piece * polyphonic sections gradually increase in depth and duration as the piece progresses
1987	La Ville d'En Haut	* early 'monumental' style in brass contrasted with mature birdsong depictions

Tables A-E trace the appearance of new ideas in the composer's evolving treatment of birdsong, extending the boundaries of his own compositional style in this as in other respects.

Style oiseau is an essential constituent in his heterogeneous musical language influenced by often unrelated musical, spiritual and physical issues. Messiaen begins by building on techniques employed by past composers (as described in 'Technique de mon Langage Musical') in order that a new compositional language be defined. His own musical language is then enriched throughout his career by the introduction of additional techniques. For example, in the Experimental Period (1949-1951) interventions are introduced, while in the *Méditations* (1969) he employs the communicable language.

Birdsong, however, remains important to Messiaen throughout his life and its significance is strengthened in several ways.

In early works, birdsong takes on a decorative rôle. 'Fluttering' or 'chattering', high-pitched sonorities, trills, interruption calls, alternators and tritones are features that appear regularly in the early works described in Chapter 5 (Table A), but are also common in all of Messiaen's music; yet, these characteristics are hallmarks of early style oiseau as well as many later, more sophisticated renditions of birdsong. The names of species are occasionally found in the early period (Table A), but it is not until *Réveil des Oiseaux* (Table C) that the names of birds are indicated in the score in every instance. In the Experimental Period (Table B), Messiaen begins to investigate the possibilities of timbre using innovative organ registrations in both *Messe de la Pentecôte* (1950) and *Livre d'Orgue* (1951): with few exceptions, bird style representations up to this point have been limited to the piano. In *Réveil des Oiseaux* and *Oiseaux Exotiques* the piano is again the main instrument for birdsong portrayal, but other instruments in the orchestra begin to depict named birdsong.

Messiaen focuses on the piano using extended techniques, contrasting textures and the full range of the instrument in *Catalogue d'Oiseaux* (Table D). Here, using only one instrument, the composer is able to concentrate on the intrinsic melodic and rhythmic characteristics of each bird's song, the interaction of many species' songs and the representation of the surrounding habitat.

Timbre becomes of major concern in the works from 1960 until the end of his life (Table E): Messiaen attempts to simulate the characteristic qualities of birdsong using invented chords and combinations of instruments. His search for timbre produces innumerable invented colour chords and innovative combinations of instruments. In *Chronochromie* (Table E), birdsong from Sweden, France, Japan and Mexico are portrayed amongst harmonies of harmonics, pizzicato and metallic percussion. Later, the metallic percussion section becomes a common feature of Messiaen's music, and Gamelan effects are also employed. In *Des Canyons aux Étoiles* (1971-1974), still more extended techniques are used from the cellos scraping their bows to the trumpets using only the mouth piece; additionally, sand and wind machines are employed. These extended techniques and unusual instruments produce extraordinary results and extend his timbral palette. In the opera, *St François d'Assise* (1975-1983), Messiaen uses the 'hors tempo' technique, as in the later *Un Vitrail et des Oiseaux* (1986), where instrumentalists are given a sign to start by the conductor, and continue playing, independent from the rest of the orchestra. This almost aleatoric effect creates still greater freedom.

It is in this relentless search for rhythmic and melodic precision and a lifetime's investigation into timbre that has brought about a wide-ranging exploration of birdsong and their incorporation in innovative compositions, exemplifying a development in his creative responses drawn from the sounds of nature. The following sections deal with seven main aspects of Messiaen's style, drawing conclusions arising from the preceding tables and the analyses contained in the earlier chapters.

(1) Selection of Species

When Messiaen first began incorporating birdsong into his works, its function was predominantly decorative, and the terms 'oiseau' and 'comme un oiseau' were used impressionistically. Although the nightingale and blackbird are mentioned in the preface to the *Quatuor pour la Fin du Temps*, it is not until *Vingt Regards sur l'Enfant-Jésus* that species are specified. Gradually, the function of birdsong becomes more prominent: for example, in a section of the 'Communion' from *Messe de la Pentecôte* (1950), there is a counterpoint solely between bird style and droplets of water, while *Le Merle Noir* (1951), a piece for flute and piano, is dedicated entirely to the songs of the blackbird.

A development in Messiaen's use of birdsong can readily be seen simply by noting the steady increase in the number and variety of species employed. Indeed, *Réveil des Oiseaux* (1953) represents thirty-eight birds from France, and *Oiseaux Exotiques* (1956) portrays birdsong from several diverse countries. As Messiaen's transcriptions accumulate, so the number of species used increases, providing the composer with an endless supply of musical inspiration.

(2) Instrumentation

The piano is an extremely important instrument in Messiaen's works: one can see in Table A above that the piano is present in most of the early pieces. In these early works, it is the

piano that produces the 'style oiseau' characteristics, labelled or otherwise. Trevor Hold has queried this choice of instrument for many reasons related to authenticity - notably, that it cannot crescendo through a sustained note, play intervals smaller than a semitone, or produce a true glissando, all of which are integral components to many birds' songs in the wild. Yet, throughout Messiaen's oeuvre, the piano is rarely excluded in a composition: in *Réveil des Oiseaux* and *Oiseaux Exotiques* it almost plays a concertante rôle, and it is called upon in isolation in many works for solo piano. Malcolm Troup claims that the piano - with its immense range, 'brittle' and 'chameleon'-like in nature - was capable of producing both 'ersatz gamelan' effects and 'twittering birdsong'⁴.

However, in the 'experimental period' (see Table B) the organ represents birdsong, using colourful, innovative registration both to accentuate and differentiate between different sonorities. By the time of *Réveil des Oiseaux*, Messiaen uses the whole available range of the orchestra to depict birdsong. The unique timbres of each musical instrument create collages of colour, and distinguishes species' unique songs. As more types of texture are introduced in later pieces, so these differentiations become more apparent.

(3) Timbre

An increasing preoccupation with timbre is a central characteristic of Messiaen's evolving compositional style. Johnson states that,

‘the concern for timbre is the main development to be found in his birdsong from 1953 to 1958.’⁵

However, the composer found that timbre was the most difficult aspect of birdsong to reproduce, or even simulate. He states:

‘each note is provided with a chord, not a traditional chord but a complex of sounds destined to give the timbre of that note...for a bird piece comprising one or two thousand notes, there are one or two thousand invented chords. It is an enormous task for the imagination’⁶.

Certainly, Messiaen’s sense of synaesthesia, and his love of colours, helped him to produce a wealth of chordal-complexes which increase the intensity of the original’, simulating the timbre of the song in the wild.

Needless to say, it is not simply the chordal-complexes that evoke an approximation of birdsong. According to Messiaen, the tones of the birds are,

‘so extraordinary that no musical instrument can reproduce them. One needs combinations of instruments, and still more combinations or complexes of pitches’⁸ (see Table E).

Messiaen has admitted that his treatment of timbre developed over time.

‘As I grew older, I drew increasingly near to timbre - my last works, such as *Des Canyons aux Étoiles*, contain far more tone-colour effects than my earlier works’⁹.

From quite early on, Messiaen explores and extends the full capabilities of instruments with regard to range of pitch, decorative devices such as trills, and 'interruption calls' (see Table A). This wealth of special effects and sonorities is developed even further through his explorations of birdsong.

(4) Special Effects

The composer often uses the full pitch range of the instruments he employs in order to produce extraordinary sound qualities. Copious trills and 'interruption calls', amongst various other effects, were part of Messiaen's vocabulary from quite early on. Of course, Messiaen creates and utilises many other special effects to generate a rich compositional palette.

For example, typical Eastern sonorities are introduced in *Sept Haïkai* (1962) along with Japanese birdsong collected during a recent tour to Japan. Here, the composer combines a solo piano part with xylophone, marimba, violins, woodwind, trumpet, trombone and numerous metallic percussion instruments. It is this metallic percussion ensemble that produces fascinating 'gamelan' effects, especially with the xylophone and marimba. Later, in *Saint François d'Assise* (1975-83), and in *Un Vitrail et des Oiseaux* (1986), the xylophone-trio (consisting of xylophone, xylorimba and marimba) becomes a favourite instrumental combination.

In *Des Canyons aux Étoiles* (1971-4) the composer uses two unusual instruments for the first time: the wind machine and the sand machine. Chimes (made from wood, shell and glass) are also used, and a thunder sheet (tôle), produces dramatic effects and enriches the birdsong. Additionally, extended techniques are found in the cello parts, where they are required to scrape their bows behind and alongside the bridge. Various mutes are employed, and double-stopped harmonics in harmonies with glissando effects are played by the strings.

(5) Texture

Messiaen's choice of texture is a further dimension of his compositional development.

Throughout this thesis, I have used seven principal types of texture in order to categorise birdsong:

- (1) monophonic
- (2) two-voiced homophonic
- (3) two-voiced homophonic (one voice dominant)
- (4) homorhythmic
- (5) homorhythmic (one voice, hand or part dominant)
- (6) hybrid texture (with 'superior' or 'inferior' resonance effects)
- (7) polyphonic

These categories have been adapted from Sun's researches¹⁰, originally intended for analyses of the *Catalogue d'Oiseaux* (see Table D), in order to facilitate further research with regard to orchestral works. As shown in the tables, originally, Messiaen's treatment of 'style oiseau' and specified birdsong was monophonic. Increasingly, monophony (and

octave writing) were replaced by two-voice homophony, homorhythm and polyphony. In *Catalogue d'Oiseaux*, the first use of (1) two-part homophony with one voice dominant and (2) chordal texture with one voice or part dominant, is found. Later, in *Des Canyons aux Étoiles* (1971-4) and *St François d'Assise* (1975-83), special effects and more elaborate cascades of colours are employed in the orchestra, producing an even wider range of textural effects. More intense polyphony is generated in later works: the first polyphonic 'outpouring' of birdsong is located in the 'dawn chorus' section of *Réveil des Oiseaux* (1953). Of course, the 'Épôde' from *Chronochromie* (1960) features eighteen solo strings in an almost continuous outpouring of polyphonic birdsong, while in *Saint François d'Assise* (1975-83) and *Un Vitrail et des Oiseaux* (1986), *hors tempo* is employed, producing a freer interaction of simultaneous linear movement.

(6) Rhythm and Melody

'The birds provided him with exactly the justification he needed for almost unlimited repetition, whether of individual pitches, of melodic figures or of sections' [Malcolm Troup]¹¹.

This endless supply of rhythmic and melodic variation is difficult to categorise. However, the underlying characteristics of the birdsongs in the main works have been revealed in the 'motivic classification' tables. Messiaen developed a characteristic style for each bird's song or call, employing not only instruments that most clearly recreate the sonority but also differentiating them with respect to phrase length, by varying speeds and textures, or by rhythmic or melodic features. Given the repetitive nature of birdsong, it has been necessary to introduce new terminology to analysis. The 'alternator' and the 'interruption

call' are examples of this. It has also been useful to simplify birdsong into its basic motivic components: for instance, the blue rock thrush (present in the *Catalogue d'Oiseaux* and in the opera) often bases its phrases around permutations of a pentatonic mode - F#, E, C#, B and A., although many phrases in the third tableau of the opera feature complicated 'dochmiac' rhythms and other chromatic pitches.

The 'motivic classification' tables in the main part of the thesis are used in conjunction with the terms taken from prosody (and ideas from Marcel Dupré's treatise¹²) and the adaptations from plainchant. Use of prosody has made it possible to trace patterns of rhythm and accent in birdsong, while shapes of melodies are often related to adaptations of plainsong¹³. Additionally, in music that is rarely tonal, 'reference' or 'anchor' points have been cited in order to locate a 'pivotal' centre in an otherwise atonal or modal song.

(7) Authenticity and its Importance

Many ornithologists have criticised Messiaen's work, his choice of instrumentation and his inexactitude. Nevertheless, few ornithologists are able to write or perform music at a professional level, and the two disciplines rarely meet. As Paul Griffiths advises,

'.. he [Messiaen] is far more conscientious an ornithologist than any earlier musician, and far more musical an observer than any other ornithologist¹⁴.'

Although Messiaen originally tried to copy exactly the sounds of birdsong, he was later to admit that,

‘involuntarily, I inject my reproductions of the songs with something of my manner and method of listening¹⁵’.

In addition, birds generally sing at such a high register that Messiaen had to transpose the songs down at least four octaves in order for them to be played by western instruments: it is this octave displacement and slowing down of the original songs that may cause them to be unrecognisable.

An analogy with painters and paintings is apposite to Messiaen’s ‘birdsong’ compositions. His representations are not so much exact reproductions (‘photographs’), as musical interpretations of birdsong (‘paintings’). This analogy may be extended when describing the nature of his pieces. Messiaen’s works fall naturally into two categories. The thirteen pieces of the *Catalogue d’Oiseaux* (1956-8) - portraying in each piece a bird’s song, habitat and other surrounding species - may be described as ‘portrait[s]’ as may *La Fauvette des Jardins* (1970) and *Petites Esquisses des Oiseaux* (1985). Indeed, *Réveil des Oiseaux* may be described as a ‘portrait of the dawn chorus’, describing the period from midnight to noon the next day in an unspecified forest of France. The second category may be categorised as ‘collage’, where bird vocalisations are taken from all over the world and there is no sense of a particular natural setting being described. *Oiseaux Exotiques* (1956), *Chronochromie* (1960) and the ‘Sermon to the Birds’ from the opera (1975-83) are examples of this. However, there are also miniature ‘portraits’ within the framework of many pieces - in the piano cadenzas of *Réveil des Oiseaux* (1953) or in *Sept Haïkai*

(1962), for example. Messiaen himself has differentiated between the two types, stating that the first is 'truthful' ('portrait') and the second is 'unfaithful' ('collage').

Neither method is more important than the other, and however complex the birdsong, Messiaen's intention was to respond creatively rather than to imitate. As Johnson advises,

'He is concerned with a human world containing birdsong, rather than a "bird world" in its own right.'¹⁶

It is apparent that birdsong features in the majority of Messiaen's compositions; indeed, in works such as *Catalogue d'Oiseaux*, *La Fauvette des Jardins* and *Réveil des Oiseaux*, it is the principal feature. Birdsong also plays an integral rôle in the composer's spiritual world: as Tanneguy de Quénetaïn advises,

'If one had to try and put in a nutshell the main features which characterise his vision of the world, one would probably isolate four governing themes: religious meditation, the sublimation of love, escape from the confines of time, and an intimate communion with nature.'¹⁷

One cannot underestimate the significance of birdsong for Messiaen. It was a central feature of his eclectic musical language which, inspired by compositional exploration and the natural and spiritual world, could not exist without one further essential component, and it is important to explore the relationship between these factors. Messiaen was fundamentally a Roman Catholic. His unrelenting loyalty and devotion to playing the organ at La Trinité and the title or subject matter to many of his works illustrate this. Even in works that, on the surface, do not indicate a theological context, there are many

features that play a symbolic rôle. These features are the hallmarks of Messiaen's music. The trinity, for example, occurs symbolically throughout the composer's oeuvre. The *Méditations* (1969) are dedicated to the mystery of the Holy Spirit as the title indicates: there are phrases that represent 'the Three are One', the 'Son' and the 'Holy Spirit', while the communicable language incorporates phrases denoting the three persons. In addition, the trinity appears symbolically in many other works. *Petites Esquisses d'Oiseaux* (1985) uses three bird's songs, *Les Offrandes Oubliées* (1930) has three movements, the fifteenth movement of *Livre du Saint Sacrement* (1984) juxtaposes three birds' songs, there are three strophes in *Vitrail et des Oiseaux* (1986), the xylophone-trio is ubiquitous and the 'personages rythmiques' system superimposes three rhythmic continuums, amongst others. In the preface to the score of *Vingt Regards sur l'Enfant Jésus* (1944), Messiaen states that 'Regard du Fils sur le Fils' has 'three sonorities, three modes, three rhythms, three strands of music superimposed on each other'. Significance is also given to prime numbers. Number five is the number of the Indian god 'Shiva', while number seven is the 'perfect number' and, for the composer, it signifies the day of rest. Christian symbolism is revealed in all his works to a greater or lesser extent.

The Greek and Hindu rhythms, with their ammetric beat, may symbolise spiritual freedom along with the added-note values and the non-retrogradable rhythms, especially when played at a slow tempo where there is even less likelihood of detecting pulse: the 'timelessness' of the slower tempos and irregular bar lengths indicate the 'end of time' and 'eternal life'. Furthermore, the Greek and Hindu rhythms may signify Christian hope and triumph over death as seen in the second movement of *Et Exspecto Resurrectionem*

Mortuorum (I Await the Resurrection of the Dead), taken from the Creed) where the metallic percussion section, using the Simhavikrama tâla, symbolises the power of the 'lion' while accompanying a tritonal trumpet theme representing the risen Christ.

Plainsong also plays an important rôle. The plainsong may illustrate a certain text, as in the elaborated version of 'Salve Regina' in *Les Corps Glorieux*, or may suggest, as in the *Méditations*, where plainchant is simple and unchanged, the simplicity of faith.

It is significant that Messiaen has analysed his own birdsong transcriptions using terminology derived from prosody and plainchant. For the composer, the birds are symbols of precisely what he wishes to attain on earth. Messiaen's search for new compositional procedures takes him further away from the sovereign liberty and improvisatory sounds of nature: when returning to birdsong, he frees himself from the constraints of his pre-conceived musical limitations. Messiaen has admitted, in conversation with Antoine Goléa, that the bird is the symbol for freedom. He continues,

'We walk, he flies. We make war, he sings'¹⁸.

His obsession with everlasting life, an issue prevalent throughout his music, indicates that he felt complete freedom could only be possible in heaven.

There are a number of paradoxes that are implicit in Messiaen's musical and spiritual philosophies. Many devout Christians admit that doubt is a necessary part of faith, but for Messiaen there are many other contradictions. The deliberate intention of his use of

carefully notated birdsong - rhythms and melodies and the interaction of birds' songs set in stone - is the antithesis of freedom, just as rhythm is to ammetricality, time is to timelessness and human love is to divine love. Birdsong is, therefore, proof of the existence of God. By seeking to evoke spiritual ecstasy through the language of the birds Messiaen upholds a profound theosophy, hoping to comprehend the truth. Perhaps the composer is taking the advice of St. John's Gospel where it is written, 'The truth will make you free' (John, 8 v32). Messiaen's birds are icons: they symbolise nature's voice or even God's voice. Their sounds perhaps give Messiaen the desire for eternal life or a preview of everlasting perfection.

It is curious that considering Messiaen's profound Catholic faith, few pieces are intended for liturgical use: it appears, however, that his eclectic means of expression - the copious symbols, techniques, inspirations and the birdsong - indicates his pantheism. God is all around us. Given the chance, the composer would chose the natural world over the man-made world: for Messiaen, the sounds of nature are the 'real' sounds and the music of the Eastern and Western traditions are pre-conceived or even 'unreal'.

'For me, ...the only real music has always existed in the sounds of nature.¹⁹'

Notes to Conclusion

¹ The frequently used scandicus melodic shape.

² This phrase is coined by Paul Griffiths in his book, Olivier Messiaen and the Music of Time, (London, Faber, 1985), 147.

³ Terminology taken from Shu-Wen Sun in his dissertation, 'Birdsong and Pitch-Class Sets in Messiaen's "L'Alouette Calandrelle"', (University of Oregon, 1995), p35.

⁴ Malcolm Troup in The Messiaen Companion, ed. Peter Hill, (London, Faber and Faber, 1995), p393.

⁵ R. S. Johnson, Messiaen, (London, Dent, 1976, R/1989), p118.

⁶ Claude Samuel, Olivier Messiaen: Music and Color. Conversations with Claude Samuel, (Portland, Oregon, Amadeus Press, 1986), pp94-5.

⁷ In this instance, the 'original' is the version - seen throughout Traité de Rythme, de Couleur, et d'Ornithologie - which is not yet orchestrated, given dynamics, an instrument or any harmonic inflection.

⁸ Taken from the Public Discussion December 7 1968, during the first Düsseldorf Messiaen Festival cited in A. Rößler, Contributions to the Spiritual World of Olivier Messiaen (Duisburg, Giles and Francke, 1986), p32.

⁹ Rößler, op. cit., p108.

¹⁰ Shu-Wen Sun, op. cit., pp33-36.

¹¹ Malcolm Troup in The Messiaen Companion, op. cit., p397.

¹² Marcel Dupré, 'Traité d'Improvisation', vol. 2 Cours Complet d'Improvisation à l'Orgue, (Paris, Leduc, 1926).

¹³ See Musical Examples in table form - II/1 and II/2.

¹⁴ Paul Griffiths, op. cit., p168.

¹⁵ Claude Samuel, op. cit., p94.

¹⁶ Johnson, op. cit., p131.

¹⁷ Tanneguy de Quénétain, 'Messiaen: Poet of Nature', Music and Musicians, xi/9, (May 1963), p10.

¹⁸ Antoine Goléa's book, Recontres avec Olivier Messiaen (Paris, Julliard, 1960), p19.

¹⁹ Ibid., p223

Musical Examples - Chapter I

1/1 added note value ('Technique de mon Langage Musical', ex. 1-9)

1 Strawinsky *Sacre du Printemps, Danse saciale.*

2 *simhanikridilo*

3 *vāgavardhana*

4

5

6

7

8

9

1/2 decorative birdsong ('Jardin du Sommeil d'Amour', *Tirangalila Symphony*)

Fl.

Vln.

Plan.

Cdo.

Violon Div.

Alto Div.

Violon

(Sonne à l'été)













(son, vbr)

[alternator]

* Dans tout le morceau, pour les cordes: vibrato très serré.

Chapter II - Musical Examples

Table II/1 Use of Prosody in Messiaen's Rhythmic Analysis

(1) Iamb	(U-)	('Traité', p439)	
(2) Double-Iamb	(U-U-)	('Traité', p555)	
(3) Double-Iamb in echo	(U-U-)	('Traité', p429)	
(4) Trochee	(-U)	('Traité', p66)	
(5) Amphimacer (cretic)	(-U-)	('Traité', p305)	
(6) Dactyl	(-UU)	('Traité', p85)	
(7) Anapaest	(UU-)	('Traité', p118)	
(8) Bacchius	(U--)	('Traité', p536)	
(9) Contra-bacchius	(--U)	('Traité', p66)	
(10) Epitrite I	(U---)	('Traité', p536)	
(11) Epitrite II	(-U--)	('Traité', p133)	
(12) Epitrite III	(--U-)	('Traité', p212)	






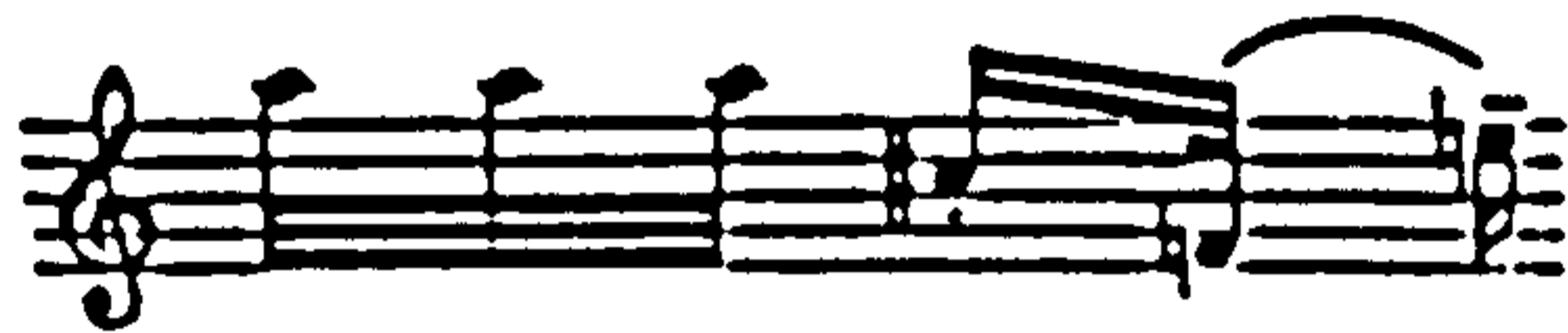
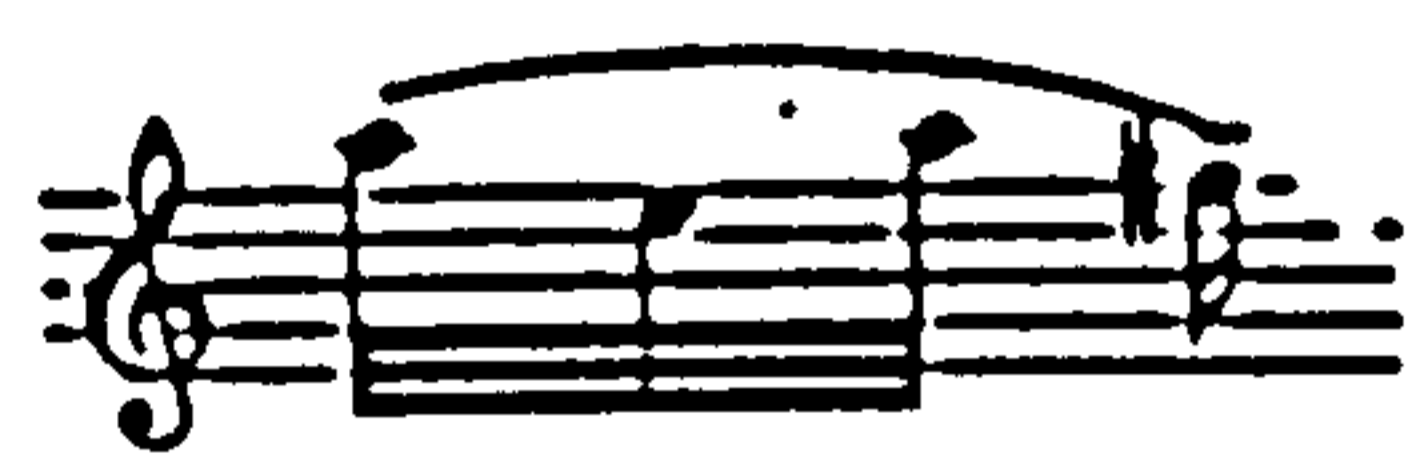
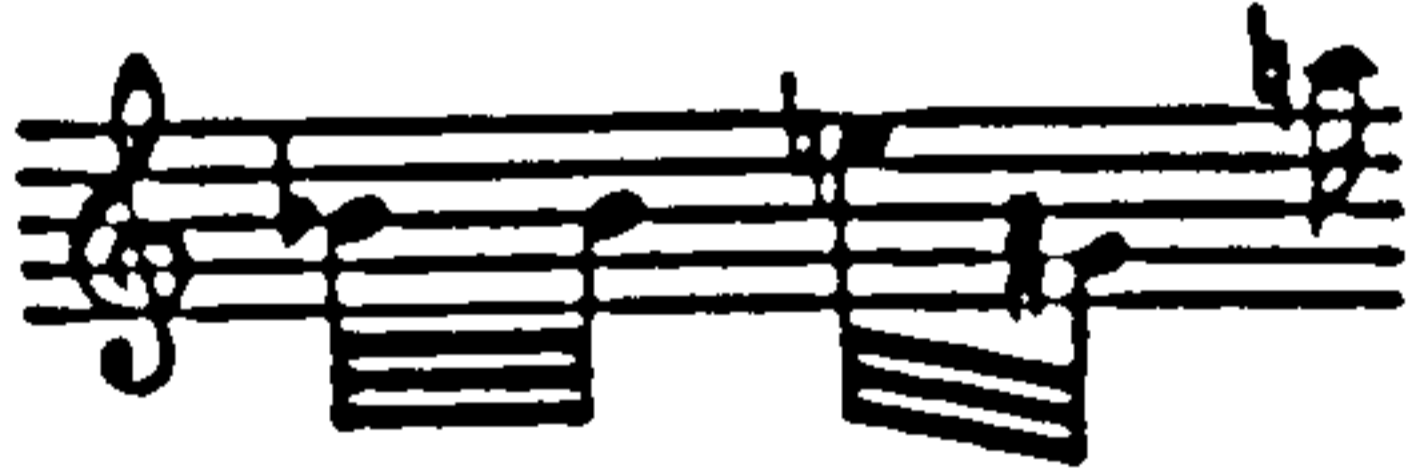


(13) Paeon IV	(UUU-)	('Traité', p121)	
(14) Choriamb	(-UU-)	('Traité', p111)	
(15) Spondee	(--)	('Traité', p239)	
(16) Ionic Minor	(UU--)	('Traité', p326)	
(17) Tribach	(UUU)	('Traité', p85)	

Table II/2 Use of Plainchant in Messiaen's Melodic Analysis

(1) Climacus Resupinus	('Traité', p78)	
(2) Porrectus Flexus	('Traité', p77)	
(3) Torculus Resupinus	('Traité', p84)	
(4) Porrectus	('Traité', p188)	
(5) Torculus	('Traité', p193 & 194)	

(6) Scandicus ('Traité', p193 & 194)



(7) Climacus ('Traité', p193 & 195)



II/3 song of the nightingale ('La Rousserolle Effarvate', Catalogue d'Oiseaux)

Rossignol [anapaest] Un peu vif (♩ = 100) [iamb] Un peu vif (♩ = 120)

ff (brusque et incisif) *f* *p* *U*

* (sans pédale)

[3 iamb] Bien modéré (♩ = 82) Lent (♩ = 100) lointain, lunaire [alternator] Un peu vif (♩ = 132)

f *ppp* *pp* *p* *f* (mordant, comme un xylophone)

* (sans péd.)

[double-iamb] Un peu vif (♩ = 120) [alternator] [harmonic ostinato]

f *U* *f* *U*

[anapaest] vif (♩ = 100)

mf *f* *f* *ff* (brusque et incisif)

ff *

Musical Examples - Chapter III

III/1 a) perfect chord b) chord on the dominant seventh c) on the chord of the ninth

Three musical staves showing chord voicings: a) perfect chord (C major), b) chord on the dominant seventh (G7), and c) on the chord of the ninth (C9).

d) resonances, perceiving an F#

Musical staff showing a melodic line with a tritone interval (F and F#) and a fermata over the F# note.

(taken from ex.183-186, 'Technique de mon Langage Musical')

III/2 tritone theme ('Technique', ex.215)

Musical staff showing a tritone theme with a tritone interval (F and F#) and a fermata over the F# note.

III/3 colour chords from *Quatuor pour la Fin du Temps* ('Technique', ex. 222)

Vocalise, pour l'Ange qui annonce la fin du Temps
 Presque lent, impalpable, lointain

Violon
 Violoncelle
 Piano

pp sourdine
 pp sourdine
 ppp

von
 vllc
 pno

Musical score for 'Vocalise, pour l'Ange qui annonce la fin du Temps' by Debussy, featuring Violin, Viola, Violoncelle, and Piano. The score includes dynamic markings (pp, ppp), performance instructions (sourdine), and chord diagrams (A, B) for the piano part.

III/4 modes of limited transposition

(Whole-tone Scale)

Mode 1

(Octatonic Scale)

Mode 2

Mode 3

Mode 4

Mode 5

Mode 6

Mode 7

III/5 extract from 'Paysage' (*Poèmes pour Mi*)

plei-ne de cha-grins et de fon-dri-è-res,

III/6 theme from 'Boris Godunov' ('Technique', ex. 75 & 76)

III/7 a) opening of Stravinsky's 'The Rite of Spring'

Lento *♩*, so tempo rubato

Clarinetto 1 in La *colla parte*

Clarinetto basso 2 in Sib *colla parte*

Fagotto 1 *Solo ad lib*

Corno 2 in Fa *colla parte*

a a a' a a'

a b a↑ b↑

Flauti
Clarinetti
Violini
Vclini
Violoncelli
Fagotti
Trombe
Tromboni
Tuba
Timp.
Gr.
Tam.
Viola
Violini
Viola
Violini
Viola
Violini
Violini
Viola
Violini
Viola
Violini
Violini
Viola
Violini
Viola
Violini
Viola

pizz
arco
pp
p
f
mf
gliss.
arco pizz

(N.B. - b is a subset of a)

III/9 'simhavikridita'

simhavikridita

III/10 diminution and augmentation ('Technique', ex.24)

TABLEAU DE QUELQUES FORMES D'AUGMENTATION
OU DIMINUTION D'UN RYTHME

24

TABLE OF SOME FORMS OF AUGMENTATION
OR DIMINUTION OF A RHYTHM

Augmentation

Vergrößerung

ajout du quart des valeurs:

addition of a quarter of the values:

Hinzufügung eines Viertels der Werte:

ajout du tiers des valeurs:

addition of a third of the values:

Hinzufügung eines Drittels der Werte:

ajout du point:
(ou ajout de la moitié des valeurs)

addition of the dot: (or addition of half the values)

Hinzufügung des Punktes: (oder Hinzufügung der Hälfte der Werte)

augmentation classique:
(ou ajout des valeurs à elles-mêmes)

classic augmentation: (or addition of the values to themselves)

Klassische Vergrößerung: (oder Hinzufügung der Werte zu sich selbst)

ajout du double des valeurs:

addition of twice the values:

Hinzufügung des Doppelten der Werte:

ajout du triple des valeurs:

addition of three times the values:

Hinzufügung des Dreifachen der Werte:

ajout du quadruple des valeurs:

addition of four times the values:

Hinzufügung des Vierfachen der Werte:

24

TABELLE EINIGER FORMEN DER VERGRÖßERUNG
ODER VERKLEINERUNG EINES RHYTHMUS

Diminution

Verkleinerung

a) retrait du cinquième des valeurs:

withdrawal of a fifth of the values:

Wegnahme eines Fünftels der Werte:

b) retrait du quart des valeurs:

withdrawal of a quarter of the values:

Wegnahme eines Viertels der Werte:

c) retrait du point:
(ou retrait du tiers des valeurs)

withdrawal of the dot: (or withdrawal of a third of the values)

Wegnahme des Punktes: (oder Wegnahme eines Drittels der Werte)

d) diminution classique
(ou retrait de la moitié des valeurs)

classic diminution: (or withdrawal of half the values)

Klassische Verkleinerung: (oder Wegnahme der Hälfte der Werte)

e) retrait des $\frac{2}{3}$ des valeurs:

withdrawal of two-thirds of the values:

Wegnahme von zwei Dritteln der Werte:

f) retrait des $\frac{3}{4}$ des valeurs:

withdrawal of three-fourths of the values:

Wegnahme von drei Vierteln der Werte:

g) retrait des $\frac{4}{5}$ des valeurs:


withdrawal of four-fifths of the values:

Wegnahme von vier Fünfteln der Werte:

Musical Examples - Chapter IV

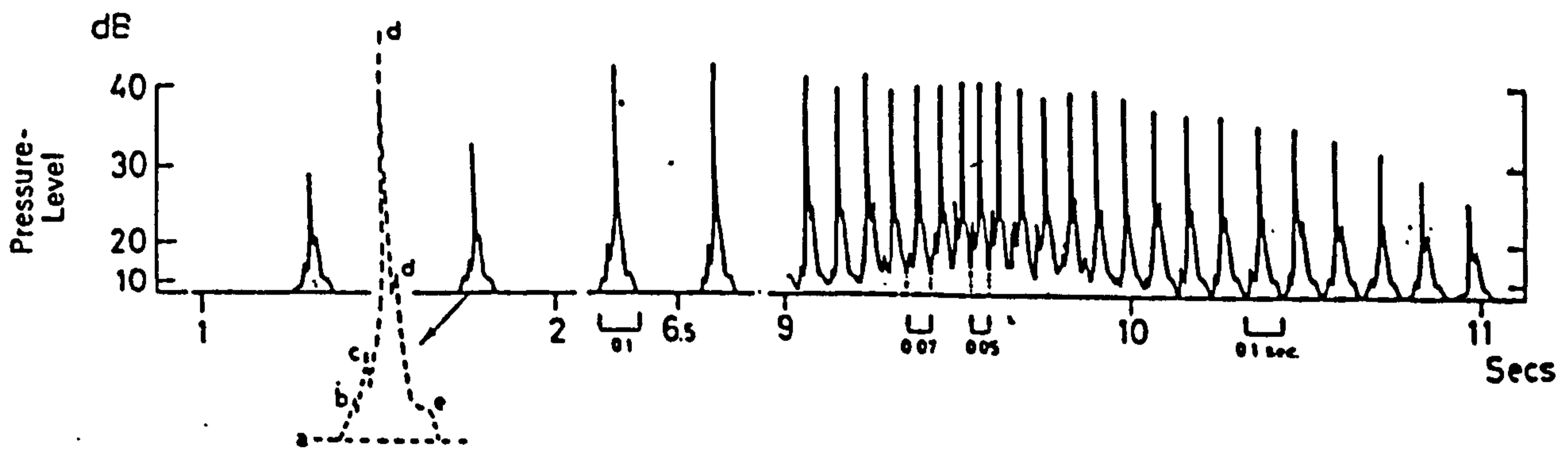
IV/1 subjective notation (taken from Hold's article, 'The Notation of Birdsong')

(i)  'the roller' (or 'shake') as in the canary'

(ii)  for tones with a strong 'mingling' of non-musical sounds.

(iii)  for sounds essentially non-musical

IV/2 pressure-level graph from a melogram, wing-beat noise in the drumming display of the ruffed grouse



Musical Examples - Chapter V

V/1 early 'style oiseau', including trills (*L'Ascension*)

1 **Lent, rêveur** (♩ = 63) *pressez très peu* **Un peu lent, souple** (♩ = 48) **Lent, rêveur** (♩ = 63)

Fl

Hautb

Cor A

2 Clar

1^{re} Viol

2^e Viol

Alto

Violon

pp

sf

V/2 two chaffinches (*Réveil des Oiseaux*)

1^{er} Pinson (tal. tal.)

2^e Pinson (tal. tal.)

pp

cresc.

sf

V/3 'fluttering' on the piano ('L'Épouvante', *Poèmes pour Mi*)

ff

-poir

V/4 melody influenced by the 'Boris Godunov' theme, gradually accelerating ('Ta Voix', *Poèmes pour Mi*)

8

ff

V/6 high-pitched acciaccaturas ('Joie et Clarté des Corps Glorieux')

V/7 flute-like timbre ('Les Bergers', *La Nativité de Seigneur*)

V/8 'Magnificat, alleluatic praise in bird style' ('Dieu Parmi Nous', *La Nativité*)

V/9 heterophonic birdsong ('Liturgie de Cristal', *Quatuor pour la Fin de Temps*)

III. Abîme des oiseaux

B. Godunov theme answering phrase B. G. theme answering phrase

Lent, expressif et triste (♩=44 env.)

Clarinettes en Si b

p (désolé)

ppp

B.G. theme

answering phrase.

Sans presser, progressif et puissant

Presque vif, gai, capricieux (♩=126 env.)

ppp *cresc. molto* *f* (ensoleillé, comme un oiseau, très libre de mouvoir)

1 2 1 alternator

alternator

3 4

scandicus scandicus

Pressez *brillant*

Lent (♩=44 env.) Presque vif (♩=126 env.)

Sans presser, progressif et puissant

ppp *cresc. molto* *f*

1 2 4

Pressez *cresc.*

Rall. Modéré (♩=92 env.)

pp *pp*

pp (écho)

Rall.

f *f* *f* *dim.*

5

(V/10 continued)

answering phrase

B.G. theme

answering phrase

Lent, expressif et triste (♩ = 44 env.)

p (désolé)

ppp

Sans presser, progressif et puissant

ppp cresc. molto

Modéré (♩ = 92 env.)

Presque vif (♩ = 126 env.)

Lent (♩ = 100 env.)

ff *pp* (écho) *f* brillant, pressés *ff*

4

B. G. theme

V/11 high-pitched 'chirps' ('Fouillis d'Arc-en-Ciel...', *Quatuor*)

Robuste, modéré, un peu vif

Von

Clar.

vielle

Robuste, modéré, un peu vif (♩ = 66 env.)

ff *p* *ff* *fff* *sec*

brutal

8^a basse.....!

V/12 bird-like calls (2nd movement of *Visions de l'Amen*)

a)

b)

ff

dr

V/13 repeated calls (2nd movement of *Visions*)

8 V

ff

2a *

V/14 repeated cluster calls (2nd movement of *Visions*)

ff

2a *

V/15 rapid demisemiquaver figuration (4th movement of *Visions*)

8

Très lent, avec amour (♩=72)

très doux, mais claire

pp

Très lent, avec amour (♩=72)

mf chanté, expressif et tendre

ppp

2a *

V/16 beginning of a whitethroat's song (*Chronochrome*)

Fauvette grisette

V/17 grace notes in 'style oiseau' (5th movement of *Visions*)

mf
pp (en laissant résonner)
mf *expressif*

V/18 elaborate, rhythmically complex monody ('Regard du Fils sur le Fils')

scandicus scandicus
iamb iamb
double-iamb
dim.
scandicus
iamb
iamb scandicus
iamb

1. *L*

2. *mf*

3. *mf*

4. *mf*

5. *mf*

6. *mf*

7. *mf*

8. *mf*

9. *mf*

10. *mf*

11. *mf*

12. *mf*

13. *mf*

14. *mf*

15. *mf*

16. *mf*

17. *mf*

18. *mf*

(L'alouette)

mf f

ionic minor ionic minor ionic minor

pacon IV pacon IV

stacc. sempre

ionic minor ionic minor pacon IV

stacc. sempre

double-iamb

piu f 5 cresc. mollo p stacc.

mf

Modéré (♩ = 116)

8

Très vif

(Le merle et tous les oiseaux)

p

f

(brouillé de pédale)

spondees

scandicus

scandicus

scandicus

iamb

porrectus

dr.

dr.

3 5 2 3 1 1

V/22 a) interruption calls ('Regard de l'Esprit de Joie')

Presque vif (♩ = 160)

PIANO

f staccato

ff (violent)

8^a bassa

b) interruption calls ('Regard de l'Esprit de Joie')

[8 climacus cells]

A musical score for piano, consisting of two staves. The top staff contains eight groups of notes, each enclosed in a bracket and labeled as a 'climacus cell'. The bottom staff provides a continuous accompaniment. The dynamic marking *ss* is present. Below the bottom staff, the letters 'Led.' are written under each of the eight climacus cells.

V/23 interruption calls and quasi-glissando ('Regard de l'Esprit de Joie')

A musical score for piano, consisting of two staves. The top staff features a series of notes with a 'Pressez' instruction above the final group. The bottom staff features a series of notes with a 'Led.' instruction under each group. The dynamic marking *ss* is present. The letters 'Led.' are written under each of the eight groups of notes.

V/24 loquacious ostinato hemidemisemiquavers ('Première Communion de la Vierge')

Un peu plus lent ($\text{♩} = 40$)

A musical score for piano, consisting of two staves. The top staff features a series of notes with a 'pp' dynamic marking. The bottom staff features a series of notes with a 'p' dynamic marking. The letters '(oiseau)' are written under the first group of notes. The dynamic marking *ppp* is present. The letters 'ppp' are written under the first group of notes.

Modéré, un peu vif (♩ = 126)
(comme un xylophone)

V/26 nightingale's song on the xylophone (*Chronochromie*)

Xylo. alternator

V/27 spirited 'style oiseau' and syncopated rhythms ('Regard des Anges')

Même mouvement
(comme un oiseau)

[extended climacus cells] →

double-iamb spondee iamb ('chirp')

V/28 a) high-pitched trills ('Le Baiser de l'Enfant-Jésus')

b) interruption calls ('Le Baiser')

V/29 grace note triplets in a complex bar ('Regard des Prophètes...')

V/30 'machine-gun' effects, here in white-note chords ('Regard de l'Onction Terrible')

V/31 a) vivacious 'style oiseau' and interruption call ('Regard de l'Eglise d'Amour')

b) black note diatonic interruption calls ('Regard de l'Eglise d'Amour')

V/32 staccato 'style oiseau' above an Eb broken chord
('Bonjour Toi, Colombe Verte', Harawi)

Un peu vif

Un peu vif

ionic minor

f (comme un oiseau) *ff*

mf *ped.* *ped.*

p *f*

mf *ped.* *ped.*

ionic minor

iamb ('chirp') *ff* *f*

iamb double-iamb iamb

ff *f* *mf* *f* *p* *mf*

mf *ped.* *ped.* *ped.* *

Un peu vif

l'eau

Un peu vif

L ionic minor

iamb

3 iambs

ionic minor

spondee

The musical score is written for a single melodic line on a grand staff. It begins in G major with a treble clef and a key signature of one flat. The tempo is marked 'Un peu vif'. The score is divided into several systems, each containing two staves. The first system includes the text 'l'eau' and 'Un peu vif'. The second system includes 'L ionic minor'. The third system includes 'iamb'. The fourth system includes '3 iambs'. The fifth system includes 'ionic minor'. The sixth system includes 'spondee'. The score features various dynamics: *p* (piano), *f* (forte), *mf* (mezzo-forte), and *ff* (fortissimo). There are also markings for *dr.* (diminuendo) and *red.* (ritardando). The music includes many slurs, accents, and rhythmic markings such as '1', '2', '3', '4', '5', '6', '7', '8', '9', '10', '11', '12', '13', '14', '15', '16', '17', '18', '19', '20', '21', '22', '23', '24', '25', '26', '27', '28', '29', '30', '31', '32', '33', '34', '35', '36', '37', '38', '39', '40', '41', '42', '43', '44', '45', '46', '47', '48', '49', '50', '51', '52', '53', '54', '55', '56', '57', '58', '59', '60', '61', '62', '63', '64', '65', '66', '67', '68', '69', '70', '71', '72', '73', '74', '75', '76', '77', '78', '79', '80', '81', '82', '83', '84', '85', '86', '87', '88', '89', '90', '91', '92', '93', '94', '95', '96', '97', '98', '99', '100'. The score ends with a double bar line and a repeat sign.

ff
Doun.dou Tchil Doun.dou Tchil.
ff
fff
climacus resupinus
Doun dou Tchil. scandicus doun . dou Tchil. doun dou Tchil.
fff
A⁴ b

V/35 'glass-like' ostinato flourish ('Doundou Tchil', Harawi)

vif
vif
169 *allegretto*
ff
Un peu vif
Doun . dou Tchil.
Un peu vif
fff
*
A⁴ b *allegretto*

Vif, Joyeux et passionné

CHANT

Il ne par . le plus.

Vif, Joyeux et passionné

PIANO

f *mf* *molto*

Red. Red. Red. Red.

V/37 decorative birdsong over F# major + 6th ('Amour, Oiseau d'Étoile', Harawi)

Presque lent, avec charme et tendresse, très pur

CHANT

Oi . seau d' . . . oi . le .

Presque lent, avec charme et tendresse, très pur

PIANO

p *pp* comme un oiseau

Red.

V/38 opening of loquacious solo ('Chant d'Amour 2', Turangalila Symphony), in a polyphonic texture, piano part

(Le piano fait du rubato pour que ses traits soient plus rapides) Solo

comme un chant d'oiseau) poco rubato *f*

alternator

cresc. *f*

V/39 'style oiseau' on piano ('Chant d'Amour 2', *Tirangalila*), in a polyphonic texture, piano part only

(le piano fait de rubato pour que ses traits soient plus rapides) Solo

comme un chant d'oiseau

pppp rubato

alternator

iamb

scandicus

porrectus

iamb

ppp

pppp

(comme un chat d'oiseau)

PIANO SOLO
(lié de pedales)

ONDE MARTENOT SOLO
(Basse-timbre d'oiseau, onde, métallisé piano - M P A 1)
f *expressif* (le plus lié possible)

* Très modéré, très tendre (♩ = 80)
(sourdine)

1^{re} VIOLONS
p *expressif*
(sourdine)

2^{de} VIOLONS Div.
p *expressif*
(sourdine)

ALTOS Div.
p *expressif*
(sourdine)

VIOLONCELLES
p *expressif*
(sourdine)

V/41 the 'serene song' ('Jardin', Turangalila)

alternator

Piano

V/42 a) common rhythmic cell

b) cell extended, forming a 'palindromic' pattern

Piano

('Jardin...', Turangalila)

c) 'chirp'

PIANO SOLO

The musical score is divided into five systems, each consisting of two staves (treble and bass clef). The first system is labeled "PIANO SOLO" and begins with the tempo marking "Un peu vif (♩ = 120)". It features a complex rhythmic pattern with various note values and rests. The second system is labeled "Piano Solo" and includes the annotation "repeated iambs" above a specific rhythmic sequence. The third system is also labeled "Piano Solo" and contains annotations "c" and "d" above the music. The fourth system is labeled "Piano Solo" and includes annotations "d'" and "c" above the music. The fifth system is labeled "Piano Solo" and features tempo markings "Moins vif", "vif", and "Un peu vif (♩ = 120)". It also includes dynamic markings "cresc." and "molto". The score is annotated with various rhythmic symbols, including "22", "spondee", and "m. 9. 12000".

R: rambe et voix céleste | Pos: flûte 4, piccolo 1, 3^o | O: bourdon B | Ped: flûte 4 seule | [2 alternators]

Un peu lent (staccato goutte d'eau)

The musical score is divided into several systems, each with staves for Violin I (VAY), Violin II (VAY), Viola (VAY), Violoncelle (VAY), and Contrabasse (VAY). The woodwind parts include Flute 4 (Pos.), Piccolo 1 and 3 (Pos.), and Pedal Flute 4 (Ped.). The organ part (O) is also present. The score includes various dynamic markings and performance instructions:

- System 1:** VAY parts start with *pp legato*. Pos parts are marked *f*. Ped part is *legato mf*. Includes a [2 alternators] annotation.
- System 2:** VAY parts are *f*. Pos part is *f*. Ped part is *mf*. Includes a [2 alternators] annotation.
- System 3:** VAY parts are *f*. Pos part is *f*. Ped part is *mf*.
- System 4:** VAY parts are *f*. Pos part is *f*. Ped part is *mf*. Includes a [alternator] annotation.
- System 5:** VAY parts are *p leg.*, *f stacc.*, and *p stacc. (oiseau)*. Pos part is *f*. Ped part is *mf*.
- System 6:** VAY parts are *p* and *pp*. Pos part is *p*. Ped part is *pp*. Includes a *rall.* marking.

Modéré (oiseau)
 R: Hautbois
 MAN. *legato dr. pp* *f* *ff* *mf*

3 (pour 8 d) *7 (pour 8 d)*

Lent
 R: *mf legato* *p* *dim.*

MAN. *p loure* *pp legato*

PED. *pp*

R: gambe et voix céleste |
 O: bourdon 8 |
 Péd: soubasses 16 et 32, tirasse R |

b) nightingale's song

Pos: flûte 4, piccolo 1, 3^o |

MAN. *Un peu vif* *più f* *(rossignol)*

G: bourdon 8 *dr.* *p* *mf* *dr.* *p*

R: flûte 4, cymbale *dr.* *2* *2*

torculus resupinus

G: bourdon 16 et octavin 2 *stacc.* *4/alternator*

Pos: flûte H | O: bourdon H |

('Communion', Messe)

Moderé, librement
Pos. *legato*

(oiseaux)

rall.

Tempo Pos.

mf *poco rubato*

pp *staccato (gouttes d'eau)*

3 (pour 2 J)

6 (pour 8 J)

3 (pour 2 J)

3 (pour 2 J)

3 (pour 2 J)

3 (pour 2 J)

3 (pour 2 J)

Pos. *poco rubato*

mf

3 (pour 2 J)

3 (pour 2 J)

rall.

a Tempo (chant de merle)

Pos: flûte 4 seule

p *poco rubato*

pp *staccato sempre*

3 (pour 2 J)

3 (pour 2 J)

scandicus
poco rall. pressez

a Tempo

②

③

④

Musical score for VI/3, measures 5-15. The score is for the right hand (RH) and includes the following annotations:

- Measure 5: circled number 5, tempo/mood marking 'rall.', and a bracketed note '3 (pour 2 d)'. A fermata is placed over measure 5.
- Measure 6: circled number 6, tempo marking 'pressez', and a bracketed note '3 (pour 2 d)'. A fermata is placed over measure 6.
- Measure 8: circled number 8, tempo marking 'pressez', and a bracketed note '10 (pour 8 d)'. A fermata is placed over measure 8.
- Measure 9: circled number 9, tempo marking 'a Tempo', and a bracketed note '3 (pour 2 d)'. A fermata is placed over measure 9.
- Measure 10: circled number 10, tempo marking 'poco rall.', and a bracketed note '3 (pour 2 d)'. A fermata is placed over measure 10.
- Measure 11: circled number 11, tempo marking 'rall.', and a bracketed note '3'. A fermata is placed over measure 11.
- Measure 12: circled number 12, tempo marking 'pressez', and a bracketed note '3'. A fermata is placed over measure 12.
- Measure 13: circled number 13, tempo marking 'poco rall.', and a bracketed note '5 (pour 4 d)'. A fermata is placed over measure 13.
- Measure 14: circled number 14, tempo marking 'rall.', and a bracketed note 'G (bourdon 8)'. A fermata is placed over measure 14.
- Measure 15: circled number 15, tempo marking 'pressez beaucoup', and a bracketed note 'Pos: (flûte 4)'. A fermata is placed over measure 15.

VI/4 chorus of larks ('Sortie', Messe), top stave only

Musical score for VI/4 chorus of larks ('Sortie', Messe), top stave only, measures 1-13. The score is for the GPR (Grand Piano Right) and includes the following annotations:

- Measure 1: title 'vif (Chœur des alouettes)', tempo marking 'stacc. ff', and a bracketed note 'a'. A fermata is placed over measure 1.
- Measure 2: bracketed note 'a'.
- Measure 3: bracketed note 'a'', and a bracketed note 'cletic'. A fermata is placed over measure 3.
- Measure 4: bracketed note 'c', and a bracketed note 'd/anapaest'. A fermata is placed over measure 4.
- Measure 5: bracketed note 'c'.
- Measure 6: bracketed note 'a', and a bracketed note 'd/anapaest'. A fermata is placed over measure 6.
- Measure 7: bracketed note 'c, f + d', and a bracketed note 'd/anapaest'. A fermata is placed over measure 7.
- Measure 8: bracketed note 'c'.
- Measure 9: bracketed note 'a', and a bracketed note 'cletic'. A fermata is placed over measure 9.
- Measure 10: bracketed note 'b', and a bracketed note 'cletic'. A fermata is placed over measure 10.
- Measure 11: bracketed note 'a', and a bracketed note 'cletic'. A fermata is placed over measure 11.
- Measure 12: bracketed note 'a''.
- Measure 13: bracketed note 'a', and a bracketed note 'cletic'. A fermata is placed over measure 13.

VI/5 blackbird's cadenza ('Chants d'Oiseaux', *Livre d'Orgue*), monophonic as written

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

cretic

climacus resupinus

torculus resupinus

scandicus

porrectus

double-iamb

climacus resupinus cells

torculus resupinus

VI/6 robin's cadenza ('Chants d'Oiseaux', *Livre d'Orgue*)

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

MANUEL

PÉDALE

Un peu lent

G: flûte 4 seul

f non legato (rouge-gorge)

VI/8 a) repeated calls of the great tit

b) sharp repeated C#s of the great spotted woodpecker

c) tritone alternator of the nightingale

('Soixante-Quatre Durées', Livre d'Orgue)

MAX.

Pos. 2H

P.A.D.

legato sempre ^ U

(merle noir) 6 8

(fauvette à tête noire)

mf

f

VI/10 1st flute cadenza (*Le Merle Noir*)

FLUTE

PIANO

Modéré

Modéré

3 (pour 8)

pp

f

ss

p

scandicus

Un peu vif, avec fantaisie

3

iamb

flatterange

4

5

6

7

8

iamb

iamb

flatterange

ppp

VI/11 'motivic island' effect in continuous semiquavers (*Le Merle Noir*)

37

38

39

40

f

f

VI/12 A' section, 2nd flute cadenza (*Le Merle Noir*)

44 *Modéré*
45 *Un peu vif, avec fantaisie*
46
47 *short alternator*
scandicus

Modéré
3 (pour 8)
pp
flatterzunge
trochee
ff

48
49 *pacon IV*

2 scandicus cells
50 *4 iambs*
51 *iamb*
scandicus
ff

52 *cretic*
53 *extended climacus*
spondee
pp
flatterzunge
< ff > ppp

4 iambs

Musical Examples - Chapter VII

VII/1 piano monophony (*Réveil des Oiseaux*)

Un peu lent (♩ = 72) Un peu vite (♩ = 114)

Piano Solo

Lorient

Fauvette à tête noire

poco

mod. viv.

VII/2 two-voiced homophony in the piano: olive-backed thrush (*Oiseaux Exotiques*)

Piano Solo

f stacc.

poco

VII/3 two-voiced homophony: one voice dominant ('L'Alouette Calandrelle', *Catalogue d'Oiseaux*)

Alouette Calandrelle

Un peu vite (♩ = 108)

16

p

mf (clair)

VII/4 a) shama in homorhythmic texture on the piano b) shama on woodwind and trumpet: homorhythmic

Piano Solo

mf

Clar. basse Sib

1 Basson

2 Cors en Fa

1 Trp.

p

mf

VII/5 homorhythm: one voice or stave dominant ('Le Courlis Cendré', Catalogue) - song of the redshank

Chevalier Gambette

Bien modéré (♩ = 92)

16.....

VII/6 resonance effects/hybrid texture: American wood thrush (Oiseaux Exotiques)

(Grive des bois, d'Amérique) [includes harmonised porrectus flexus shapes]

Très modéré (un peu rubato, laissez longuement vibrer)

(♩ = 100)

VII/7 a) carrion crow in chordal texture, onomatopoeia

Très vif (♩ = 100) Très modéré (♩ = 84) Très vif (♩ = 100)
 (très vite) bré bi. bré bi. bré, tuuuu, (très vite)

Piano Solo
 Corneille noire

b) serin

Vif (♩ = 80)

Serin bleu

c) cry of nuthatch

Moderé (♩ = 93)
 cri de la Sittelle

Piano Solo

[3 ionic minor metres]

d) greenfinch and blue tit

Un peu vif (♩ = 114) Très vif (♩ = 100)
 Verdier Mésange bleue

Piano Solo

(Réveil)

e) 'pi-pe-rè-re' calls of the song thrush

Grice maistrance

Allegro (♩ = 100)

VII/8 short calls from chiffchaff, little owl, wood lark; robin's song (Réveil)

Un peu vif (♩ = 116) Moderé (♩ = 93)
 Alouette taupe

Poilliot vélocé
 (sans rouls) (sans avec des baguettes) (tip, top, tip top)

Rouge-gorge

Chouette chevêche

6 scandicus cells

'deux en deux'

Piano Solo

Fauvette grisette

Piano Solo

The first system of the piano solo for 'Fauvette grisette' consists of two staves. The upper staff contains a complex melodic line with many sixteenth and thirty-second notes, while the lower staff provides a rhythmic accompaniment with chords and moving lines.

Piano Solo

The second system continues the piano solo for 'Fauvette grisette' with two staves, maintaining the intricate melodic and harmonic texture.

Piano Solo

The third system concludes the piano solo for 'Fauvette grisette' with two staves, ending with a final chordal cadence.

VII/10 robin's cadenza (*Réveil*) correctus

Piano Solo

p (*rapide, mais doux et confiant*)

Rouge-gorge

climacus

iamb.

pacon IV

The first system of the piano solo for 'robin's cadenza' is marked *p* and includes the instruction '*rapide, mais doux et confiant*'. It features a series of chords and melodic fragments. Annotations include 'climacus' pointing to a specific melodic sequence, 'iamb.' pointing to a rhythmic pattern, and 'pacon IV' pointing to a chordal structure.

Piano Solo

double-iamb

The second system continues the piano solo for 'robin's cadenza' with two staves. An annotation 'double-iamb' points to a rhythmic pattern in the lower staff.

Piano Solo

The third system continues the piano solo for 'robin's cadenza' with two staves, showing further development of the melodic and harmonic material.

Piano Solo

double-iamb

climacus

The fourth system continues the piano solo for 'robin's cadenza' with two staves. Annotations 'double-iamb' and 'climacus' are present, highlighting specific rhythmic and melodic elements.

Piano Solo

iamb

The fifth system concludes the piano solo for 'robin's cadenza' with two staves. An annotation 'iamb' points to a rhythmic pattern in the upper staff.

Musical score for VII/11, featuring rich cluster chords on the violins. The score is written for two staves: Violins (Violons) and Violas (Altos). The music consists of dense, overlapping chords and textures.

VII/12 chords built on perfect and augmented fourths

a) violins divisi & violas

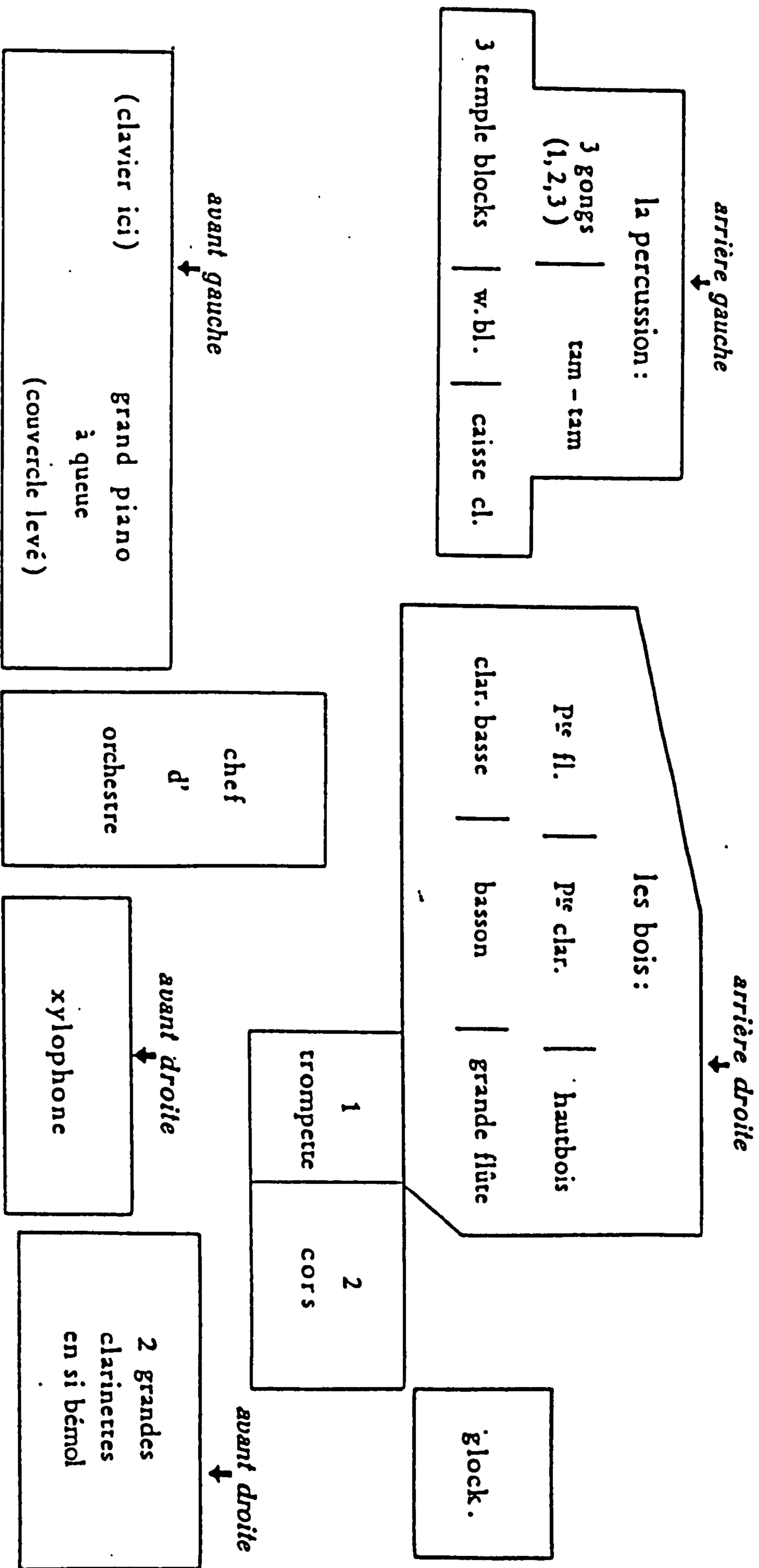
Musical score for VII/12a, showing chords built on perfect and augmented fourths for violins divisi and violas. The score is written for two staves: Violins (Violons) and Violas (Altos). The music features complex, dissonant chord structures.

b) golden oriole

Musical score for VII/12b, showing chords built on perfect and augmented fourths for golden oriole. The score is written for two staves: Violins (Violons) and Violas (Altos). The music features complex, dissonant chord structures. The word *(Réveil)* is written to the right of the score.

VII/13 blackbird's cadenza (*Réveil*)

Musical score for VII/13, showing blackbird's cadenza for piano solo. The score is written for a single staff: Piano Solo. The music is highly complex and features a variety of rhythmic patterns and textures. The word *Merle noir* is written above the score. The word *dactyl* is written to the left of the score, pointing to a specific rhythmic pattern. The score is divided into measures numbered 1 through 22.



3 (Mainate bindou) *vif* (♩=144)

harmonic alternator

glissando

mf

m. d. dessus

Piano Solo

3

f (timbre en bois)

glissando (extended climax) *m. d. dessus*

Piano Solo

5

harmonic ostinato

mf

pp

Piano Solo

7 Presque *vif* (♩=112)

9 *vif* (♩=144)

10

harmonised scandicus

p (*p.2*)

pp

mf

Piano Solo

11

12 *Acésitant, presser*

13 *a tempo*

4 two-part anapaests

pp

f

pp

Piano Solo

14 15 16 17

Piano Solo

p *sec* *mf* *f*

18 19

Piano Solo

Presque vif ($\text{♩} = 112$)

p (*p. 2*) *f* (*act. timbre en bois, proche du temple-block*)

très sec *très sec* *iamb*

20 (Liotbriz de Cbioe) 2 scandicus cells 3 iamb

27

21 22

Piano Solo

Très vif ($\text{♩} = 116$) *m.d. dessus* (Malsale) Presque vif ($\text{♩} = 112$)

p (*p. 2*) *très sec* *très sec*

(Grive des bois, d'Amérique)

Très modéré (*un peu rubato, laissez longuement vibrer*)

24 25 26

Piano Solo

f (*vibrant, ensoulé*) *harmonised porrectus flexus*

(laissez vibrer) *(laissez vibrer)* *(laissez vibrer)*

harmonised porrectus flexus

27 28

Piano Solo

f *para rall.* *a tempo* *harmonised porrectus flexus*

(laissez vibrer)

29 30

Piano Solo

f (*Grive de Wilson*) *un peu vif* ($\text{♩} = 92$)

f *5 chordal tribachic cells*

VII/16 cardinal of Virginia (*Oiseaux Exotiques*)

(Cardinal-rouge de Virginie)

Très vite (♩ = 100) (le plus vite possible, brillant, comme un étirement de gouttes d'eau)

Piano Solo

5 2

Piano Solo

7 2

Piano Solo

7

Piano Solo

9 2

Piano Solo

f (brillant)

5 5

Piano Solo

5

8 Un peu lent (♩ = 58)

1^{re} Fl.
1 Fl.
1 Cl. Bb
Pic. Clar. Bb
2 Clar. Sib
Clar. basse Sib
1 Basson

//

1^{re} Fl.
1 Fl.
1 Cl. Bb
Pic. Clar. Bb
2 Clar. Sib
Clar. basse Sib
1 Basson

(only woodwind ensemble shown here)

Un peu *vif* (♩ = 116) *vif, brillant* (♩ = 152)

maielement de l'Oiseau-chat Dolicoz ou Bobolink

Piano Solo

Oiseau-chat ou Moqueur de la Caroline

Piano Solo

(m.g. dessus)

Piano Solo

(m.g. dessous) *ff*

Piano Solo

Piano Solo

Piano Solo

Piano Solo

The musical score is arranged in a standard orchestral format. The instruments listed on the left are: 1^{re} Fl., 2^e Fl., 1 B♭, 1^{er} Clar. M. b., 2^e Clar. S. b., Clar. basse S. b., 1 Basson, 2 Cors en Fa, 1 Trp., Glock., Ylo., Piano Solo (with two staves), 1 Trp. H., W. H., Caisse cl., 3 Gongs, and Tam-tam. The score is divided into four measures. The woodwinds and strings play a rhythmic pattern of eighth notes. The piano solo part features a complex, multi-voiced texture. The percussion instruments play a steady, rhythmic accompaniment. The score concludes with a double bar line and the word 'FIN' in the top right corner.

(L. chef reste le bras en l'air pendant la pause, jusqu'à la double barre.)

Musical Examples - Chapter VIII

VIII/1 a glissando like a harp ('La Rousserolle Effarvate', *Catalogue d'Oiseaux*)

Rousserolle Effarvate
Vif (♩ = 144)

(comme un glissando de harpe)

VIII/2 cries of the alpine chough ('Le Chocard des Alpes', *Catalogue*)

Chocard des Alpes
Bien modéré (♩ = 112)

(un Chocard traverse le précipice en criant)
(cri tragique dans la solitude)

(les Chocards)
Modéré (♩ = 132)

[3 anapaests]

VIII/3 hybrid texture of the golden oriole ('Le Loriot', *Catalogue*)

Lent (♩ = 60)

Bien modéré (♩ = 100)

sourd calme
p

mf sans sourd.

coulé, doré

Lorient

Lent (♩ = 56)

VIII/5 a) glissando of the robin ('Le Lorient', Catalogue) b) glissando of the song thrush ('Le Lorient', Catalogue)

Rouge-gorge

Un peu vif (♩ = 128)

Vif (♩ = 144)

1^{re} Fauvette des jardins VIII/6 two-part polyphony in two garden warbler's songs ('Le Lorient', Catalogue)

1^{re} Fauvette des jardins

mf (mettre tres peu de pedale)

2^e Fauvette des jardins

Martinets noirs
(strident)

Musical score for Martinets noirs (strident). It consists of two staves, treble and bass clef. The tempo is marked '16?' and the dynamic is 'mf'. The music features sharp, rhythmic patterns with accents and slurs, characteristic of strident calls.

VIII/8 representations of water

a) water with a 'muffled' quality .

Musical score for water with a 'muffled' quality. It consists of two staves, treble and bass clef. The tempo is marked 'vif (♩ = 152)' and the dynamic is 'ppp'. The music features a dense, textured sound with many notes, creating a muffled effect.

b) 'lapping of water'

Musical score for 'lapping of water'. It consists of two staves, treble and bass clef. The music features a rhythmic pattern with slurs and accents, suggesting the sound of water lapping. Dynamics include 'mf', 'pp', and 'f'.

(clapotis de l'eau)

c) 'the blue sea'

Musical score for 'the blue sea'. It consists of two staves, treble and bass clef. The tempo is marked 'Très lent (♩ = 46) (doux, harmonieux et contemplatif)' and the dynamic is 'p'. The music features a slow, harmonic, and contemplative sound. The title is 'La mer bleue'.

('Le Merle Bleu', Catalogue)

(pouce couché)

Musical score for 'the blue sea' (pouce couché). It consists of two staves, treble and bass clef. The music features a slow, harmonic, and contemplative sound, similar to the previous score. Dynamics include 'mf' and 'p'.

a) continuous descending flourish

Tres vite (♩ = 160)
(les ongles)

This musical score is for a piece titled 'Tres vite (les ongles)' with a tempo of 160 quarter notes per minute. It consists of two systems of piano accompaniment. The first system features a continuous descending flourish in the right hand, with the left hand providing harmonic support. The second system continues this flourish, incorporating a 'dim.' (diminuendo) marking in the right hand and a 'Ped.' (pedal) marking in the left hand. The score includes various musical notations such as slurs, accents, and dynamic markings like 'mf'.

b) with harmonies

vite (♩ = 144)

This musical score is for a piece titled 'vite' with a tempo of 144 quarter notes per minute. It features a piano accompaniment with a 'rumbling' trill in the bass. The score is divided into four measures, each with distinct dynamic markings: 'mf' (mezzo-forte) in the first, 'f' (forte) in the second, 'p' (piano) in the third, and 'pp' (pianissimo) in the fourth. The notation includes slurs, accents, and a 'Ped.' (pedal) marking.

c) 'rumbling' trill in the bass

This musical score illustrates a 'rumbling' trill in the bass. It features a piano accompaniment with a continuous trill in the left hand. The right hand plays a descending flourish. The score includes a '(dr. dessus)' (drum above) marking and a '(Ped sempre)' (pedal sempre) marking. The notation includes slurs, accents, and dynamic markings like 'mf'.

201

(dr. dessus)

mf $\frac{3}{4}$ 4 2 6 2 ppp

This musical score is for a piece titled '201'. It features a piano accompaniment with a 'rumbling' trill in the bass. The score includes a '(dr. dessus)' (drum above) marking and a '(Ped. sempre)' (pedal sempre) marking. The notation includes slurs, accents, and dynamic markings like 'mf' and 'ppp'.

(Ped. sempre)

('Le Merle Bleu', Catalogue)

Grand Corbeau
Un peu vif (♩ = 132)

Musical score for Grand Corbeau. It consists of two staves. The upper staff is in bass clef with a key signature of one flat and a tempo of 'Un peu vif' (♩ = 132). The lower staff is in bass clef with a key signature of one flat. The music features a series of rhythmic patterns with accents and slurs, characteristic of raven calls.

VIII/11 source of the rock bunting's strophes ('Le Traquet Stapazin', *Catalogue*)

Bruant fou
vif (♩ = 132)

First system of the musical score for Bruant fou. It consists of two staves. The upper staff is in treble clef with a key signature of one flat and a tempo of 'vif' (♩ = 132). The lower staff is in treble clef with a key signature of one flat. The upper staff has several groups of notes circled in red. The lower staff has a 'Ped' marking below it.

(sans ped.)

Second system of the musical score for Bruant fou. It consists of two staves. The upper staff is in treble clef with a key signature of one flat and a tempo of 'vif' (♩ = 132). The lower staff is in treble clef with a key signature of one flat. The upper staff has several groups of notes circled in red. The lower staff has a '(Ped sempre)' marking below it.

8

mf *cresc.*

(Ped sempre)

This system contains two staves of music. The upper staff begins with a treble clef and a common time signature. The lower staff begins with a bass clef. The music consists of rapid sixteenth-note passages. A dynamic marking of *mf* is present at the start, and *cresc.* is written above the second staff.

8

ff *p* *mf* *mf*

(Ped sempre) * Ped (Ped sempre)

This system contains two staves of music. The upper staff begins with a treble clef and a common time signature. The lower staff begins with a bass clef. The music features a variety of dynamics including *ff*, *p*, and *mf*. Pedal markings include *(Ped sempre)*, ** Ped*, and *(Ped sempre)*.

8

ff *p* *mf* *ff* *p* *mf*

(Ped. sempre)

This system contains two staves of music. The upper staff begins with a treble clef and a common time signature. The lower staff begins with a bass clef. The music features a variety of dynamics including *ff*, *p*, and *mf*. The instruction *(Ped. sempre)* is written below the first staff.

8

f *pp*

(Ped. sempre)

This system contains two staves of music. The upper staff begins with a treble clef and a common time signature. The lower staff begins with a bass clef. The music features dynamics of *f* and *pp*. The instruction *(Ped. sempre)* is written below the first staff.

8

mf *ff* *p* *pp* *cresc.*

(Ped. sempre)

This system contains two staves of music. The upper staff begins with a treble clef and a common time signature. The lower staff begins with a bass clef. The music features dynamics of *mf*, *ff*, *p*, and *pp*, along with a *cresc.* marking. The instruction *(Ped. sempre)* is written below the first staff.

8

f *ff*

(Ped sempre) *

This system contains two staves of music. The upper staff begins with a treble clef and a common time signature. The lower staff begins with a bass clef. The music features dynamics of *f* and *ff*. The instruction *(Ped sempre)* is written below the first staff, and an asterisk *** is placed below the second staff.

Extrêmement lent (♩ = 62)

VIII/14 'resounding' calls of the tawny owl, falling motive C-A richly harmonised ('La Chouette Hulotte', Catalogue)

Chouette Hulotte

Lent (♩ = 80)

VIII/15 contrasting song of the nightingale (L'Alouette Lulu', Catalogue)

Rossignol

Vif (♩ = 152)

Un peu vif (♩ = 118)

p (comme un clavecin mûri de gang)

Vif (♩ = 154)

Un peu vif (♩ = 116)

1^{re} Effarvate
VII (♩=144)

16

mf (reclaboussant)

mf

2^e Effarvate

(m.d. dessus)

mf

mf

mf

mf

presses

mf

(trille)

mf (Ped. sempre)

cresc.

cresc.

Plus vite (♩=176)

8

mf

mf (Ped. sempre)

VII (♩=144)

8

dim.

ppp

ppp

(sans ped.)

VIII/17 homorhythmic calls

a) chorus of cicadas

a b b b (etc)

(Chœur des cigales)

Presque vite (♩ = 139)

b) kestrel

a b b c

Vite (♩ = 162)

c) quail 2 cretic rhythms

(sans péd., avec sourdine)

(L'Alouette Calandrelle, Catalogue)

VIII/18 two-voice homophony: short-toed lark

(L'Alouette Calandrelle, Catalogue)

Un peu vite (♩ = 108)

vite (♩ = 160)

Un peu vite (♩ = 108)

vite (♩ = 162)

Un peu vite (♩ = 104)

vite (♩ = 160)

Grand Duc

(ululement grave du mâle)

Un peu lent (♩ = 66)

(la femelle répond)

Bien modéré (♩ = 72)

Un peu vif (♩ = 128)

(le mâle)

Un peu lent (♩ = 66)

(la femelle: percussion étouffée)

Un peu vif (♩ = 128)

VIII/20 bronzed two-note cells from the mistle thrush ('La Buse Variable', Catalogue)

Buse variable

Bien modéré (♩ = 96)

(cri miulé)
Ped

VIII/22 'wild and fierce caw[s]' of the carrion crow ('La Buse Variable', *Catalogue*)

Corneille noire

Vif (♩ = 152)

Vif (♩ = 144)

(croassement sauvage et féroce)
Ped * Ped * Ped * Ped *

VIII/23 a) seven-voiced homorhythm: black wheatear

Traquet rieur

Modéré (♩ = 168)

Ped Ped *

b) 'affectionate' sonorities: blue rock thrush

Merle bleu

Un peu lent (♩ = 100)

p (caressant) mf Ped Ped

('Le Traquet Rieur', *Catalogue*)

Merle bleu
Un peu lent (♩ = 100)

p (cresc.) *pp*

* *ca*

VIII/25 a) high-pitched, ‘fluted’ chords over Eb minor

Courlis cendré
Modéré (♩ = 120)

mf (flute, triste)

ca *

b) ‘wild and passionate’ trills

Très vite (♩ = 184)
(sauvage et passionné)

mf (m. g. dessus) *simile*

(Ped sempre)

c) repeated ascending two-voiced quasi-glissandos

Courlis cendré
Bien modéré
(♩ = 104)

f *dim.*

mf (tragique et désolé, dans le sentiment d'un glissando)

ca

(‘Le Courlis Cendré, *Catalogue*)

En peu air (♩. 128)

The first system of the musical score consists of two staves. The upper staff is for the piano, and the lower staff is for the voice. The piano part begins with a dynamic marking of *mf* and includes a series of notes with accents. The vocal line starts with a dotted line and a fermata, followed by a series of notes. The system concludes with a double bar line and a repeat sign.

The second system continues the musical piece. It features a bracketed section of seven notes labeled "7 iambs". The piano part has a dynamic marking of *f* and includes a series of notes with accents. The vocal part continues with a series of notes. The system ends with a double bar line and a repeat sign.

The third system of the score includes two bracketed sections: "4 iambs" and "9 iambs". The piano part has a dynamic marking of *f* and includes a series of notes with accents. The vocal part continues with a series of notes. The system ends with a double bar line and a repeat sign.

The fourth system of the score features piano and vocal staves. The piano part has a dynamic marking of *p* and includes a series of notes with accents. The vocal part continues with a series of notes. The system ends with a double bar line and a repeat sign.

The fifth system of the score includes annotations such as "cluster trillings" and "scandicus (2-pt)". The piano part has a dynamic marking of *mf* and includes a series of notes with accents. The vocal part continues with a series of notes. The system ends with a double bar line and a repeat sign.

scandicus (2-pt)

mf *f* *mf* *f* *sf*

sans ped *ped.* *sans ped.* *ped.*

[5 iambs: 2-pt]

f *dim.* *p*

.....

Musical Examples - Chapter IX

IX/1 a) song of the skylark accompanied by trilled cluster chords on strings ('Antistrophe I', *Chronochromie*)

The musical score is arranged in a multi-staff format. The top four staves represent the percussion ensemble: **Xylo**, **Marimba**, **Clashes**, and **Cymb. susp.**. The bottom six staves represent the string ensemble: **1^{re} Violon**, **2^{de} Violon**, **4 Altos**, **4 Violles**, and **C.R. solo**. The score is divided into four measures. The string parts feature trilled cluster chords, with first and second endings indicated by '1.' and '2.' above the notes. The first ending is marked with a trill symbol and the instruction '(sons réels)'. The second ending is marked with a trill symbol and the instruction '(son réel)'. The percussion parts include rhythmic patterns such as '3 3 / 32' and '2 3 / 32'. The dynamic marking *ppp* is used throughout. A boxed number '32' is located at the bottom left of the page.

b) song of the song thrush homorhythmic on woodwind
 ('Antistrophe II', *Chronochromie*)

Un peu vite (♩ = 160)

Orque musicale

3 Fl
 2 Clar
 2 Bass
 3 Tromb

115

IX/2 glissandos of the narcissus flycatcher ('Introduction', *Chronochromie*)

Ribitaki
 (Gobe-mouches Narcisse du Japon)

plus touches blanches

correctus

Xylo
 Marimba
 Cliches
 3 Gongs

2/16 3/16 2/16

IX/3 superimposition of three Japanese birds: white-eye, grey thrush and little cuckoo
(‘Coda’, *Chronochromie*)

Moderé (♩ = 120)

1^{re} Fl

2^e Fl

2 Zosterops à lunettes (Japon)

1^{er} Clar

2^e Clar

Merle Japonais

Glock

Xyl.

Marimba

Hotogounisseu
(petit coucou du Japon)

The musical score is written for a symphonic band. It features eight staves of music. The top two staves are for Flute 1 and Flute 2. The next two staves are for Clarinet 1 and Clarinet 2. The fifth staff is for Glockenspiel, and the sixth is for Xylophone. The bottom two staves are for Marimba. The tempo is marked 'Moderé' with a quarter note equal to 120 beats per minute. The key signature has one flat (B-flat). The score is divided into measures by vertical bar lines. Various musical notations such as slurs, accents, and dynamic markings are present throughout the piece.

Très lent ($\text{♩} = 72$)

This musical score is for a full orchestra, including woodwinds, strings, and percussion. The tempo is 'Très lent' with a quarter note equal to 72 beats per minute. The score is divided into four measures. The woodwind section (Flutes, Clarinets, Bassoon, Saxophones) and strings (Violins, Violas, Cellos, Double Basses) play dense, accented chords. The percussion section (Toms, Snare, Cymbals, Glockenspiel, Xylophone, Marimba, Chimes, Gong, Cymbal, Triangle) provides a rhythmic accompaniment with various patterns of accents. The percussion parts are marked with '2', '3', and '32', indicating the number of beats or measures. The score is written in a major key and 4/4 time.

This page contains a detailed musical score for a large orchestra and choir. The instruments and parts are listed on the left side of the page:

- 1^{re} VI (Violin I)
- 2^e VI (Violin II)
- 3^e VI (Violin III)
- 2 Hib (Viola)
- C angl (Violoncelle)
- 1^{re} Clar. (Clarinete)
- 2^e Clar. (Clarinete)
- Cl. basac (Clarinete basse)
- 3 Hous (Hautbois)
- 1^{re} Trp. (Trompe)
- 3 Trp. (Trompe)
- 4 Corn (Corne)
- 3 Trbu (Trombone)
- Tuba
- Glock (Glockenspiel)
- Xylo. (Xylophone)
- Marimba
- Cloches (Cloches)
- 1 Gonge (Gong)
- Ch. T T (Chœur)
- 1^{er} Violoncelle (Violoncelle)
- 2^e Violoncelle (Violoncelle)
- Altos (Violoncelle)
- Velles (Violoncelle)
- C. B. (Contrebasse)

The score is written in a 3/16 time signature. It features complex rhythmic patterns, including triplets and sixteenth notes. The woodwind and brass sections have prominent parts with many sixteenth-note runs. The percussion section includes a variety of instruments like glockenspiel, xylophone, marimba, and gong. The vocal parts are written in a style that suggests a large choir with multiple voices.

... .. de 3 8 la definitive

IX/6 ostinato pattern of the yellowhammer ('Épôde', *Chronochromie*)

IX/7 continual 'chirps' of the chiffchaff ('Épôde', *Chronochromie*)

IX/8 'machine-gun' demisemiquavers of the nightingale ('Épôde', *Chronochromie*)

IX/9 two marsh warblers on clarinets ('Strophe I', *Chronochromie*)

Très modéré (♩=144)

Osprey (Swedish)
Balbusard (Suède)

1^{re} Fl.
2 Fl.
3^e Fl.
2 Hfb.
C. angl.
1^{re} Clar.
2 Clar.
Cl. basse
3 Cors
1^{re} Trp.
3 Trp.
4 Cors
3 Trbon.
Tuba
Cloches
3 Gonges
Chln.
T.-tam.
1^{re} Vols.
div.
en 3
2^{de} Vols.
div.
en 3
Altes
di.
Velles

3
16
2
16
3
16

arco
div.
en 3
arco
div.
en 3
arco
arco
arco
arco

10

* De 10 à 11 excl: les petites notes brèves.

IX/11 superimposition of interversions on violins ('Strophe I', *Chronochrome*)

Musical score for IX/11, 'Strophe I', *Chronochrome*. The score is for four violin parts: 1^{re} Violon (8 staves), 2^e Violon (7 staves), Alto (8 staves), and Violoncelle (4 staves). The time signature is 4/8. The score is divided into two systems. The first system includes markings for 'non vibrato' and 'pp' (pianissimo). Three specific interversions are labeled: 'intersion 1' in the 1^{re} Violon part, 'intersion 2' in the 2^e Violon part, and 'intersion 3' in the Violoncelle part. A circled number '22' is located at the bottom left of the first system. The second system continues the musical notation across the same parts.

IX/12 trilled cluster chords on violins ('Introduction', *Chronochrome*)

Musical score for IX/12, 'Introduction', *Chronochrome*. The score is for four violin parts: 1^{re} Violon (6 staves), 2^e Violon (6 staves), Alto (6 staves), and Violoncelle (6 staves). The time signature is 3/16. The score is divided into two systems. The first system includes markings for 'arco' and 'pp' (pianissimo). The second system includes markings for 'arco' and 'tr' (trill). The score features complex trilled cluster chords across all parts.

Un peu vif $\text{♩} = 112$

1^{re} FLÛTE
Noji

2^e FLÛTE
Nojiko

1^{er} HAUTBOIS
Kuro tenguji

2^e HAUTBOIS
Mejiro

COR ANGLAIS
Iwabibari

1^{re} CLARINETTE
Biazuj

2^e CLARINETTE
Kibitaki

CLARINETTE BASSE

1^{er} BASSON

2^e BASSON

TROMPETTE

XYLOPHONE
1 Un peu vif $\text{♩} = 112$
Juri

MARIMBA
San kô chô

CENCERROS
pp 0 (pour 0)

CROTALES

CLOCHES

C. G. C. T.

1

a) two clarinets in Bb

[3 choriamb]

1^{re} Clar *Kibitaki* 2^e CLARINETTE *Kibitaki*

b) flute

Fl. *Kibitaki*

c) clarinet in Eb and second oboe

2^e Clar *Kibitaki* 2^e Oboe

d) marimba

[3 choriamb]

Marimba *Kibitaki*

e) 1^{re} piano cadenza

[3 choriamb]

2 *Un peu vif* ($\text{♩} = 120$)
(bien faité, amusant, joyeux, sans hâte) -
Kibitaki

5 *Modéré* ($\text{♩} = 100$) *vif* ($\text{♩} = 144$) extended choriamb

8 9 10 11 3 extended choriamb

unapaest 2 choriambis

2 paeon IV cells
Très vif (♩ = 100)

20 21 22 23 Modéré (♩ = 70)

Préque vif (♩ = 102) 2 extended paeon IV cells
24 (bien détaillé) 25

iamb porrectus spondee

26 27 Très vif (♩ = 170) (brillant) 28 Modéré (♩ = 100)

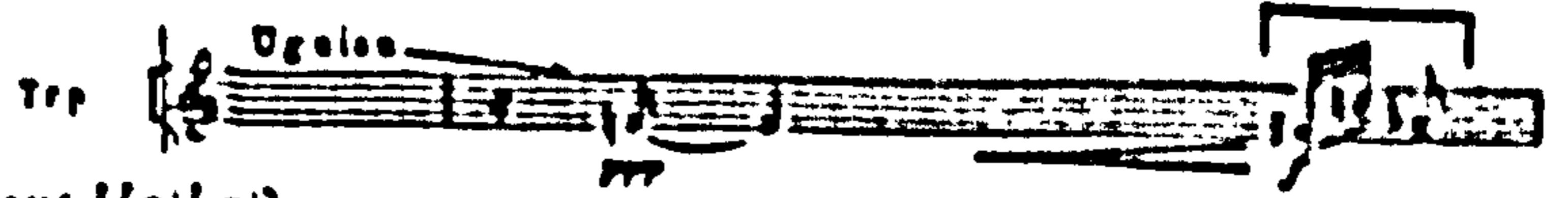
2 extended choriambis

29 30 31 32 Modéré (♩ = 70)

vif (♩ = 111)

33 Très vif (♩ = 100) 34 Extrêmement vif (♩ = 200) 35 Un peu vif (♩ = 100) 36 37 ('Yamanaka-Cadenza', Sept Haikai)

cresc. (colando)

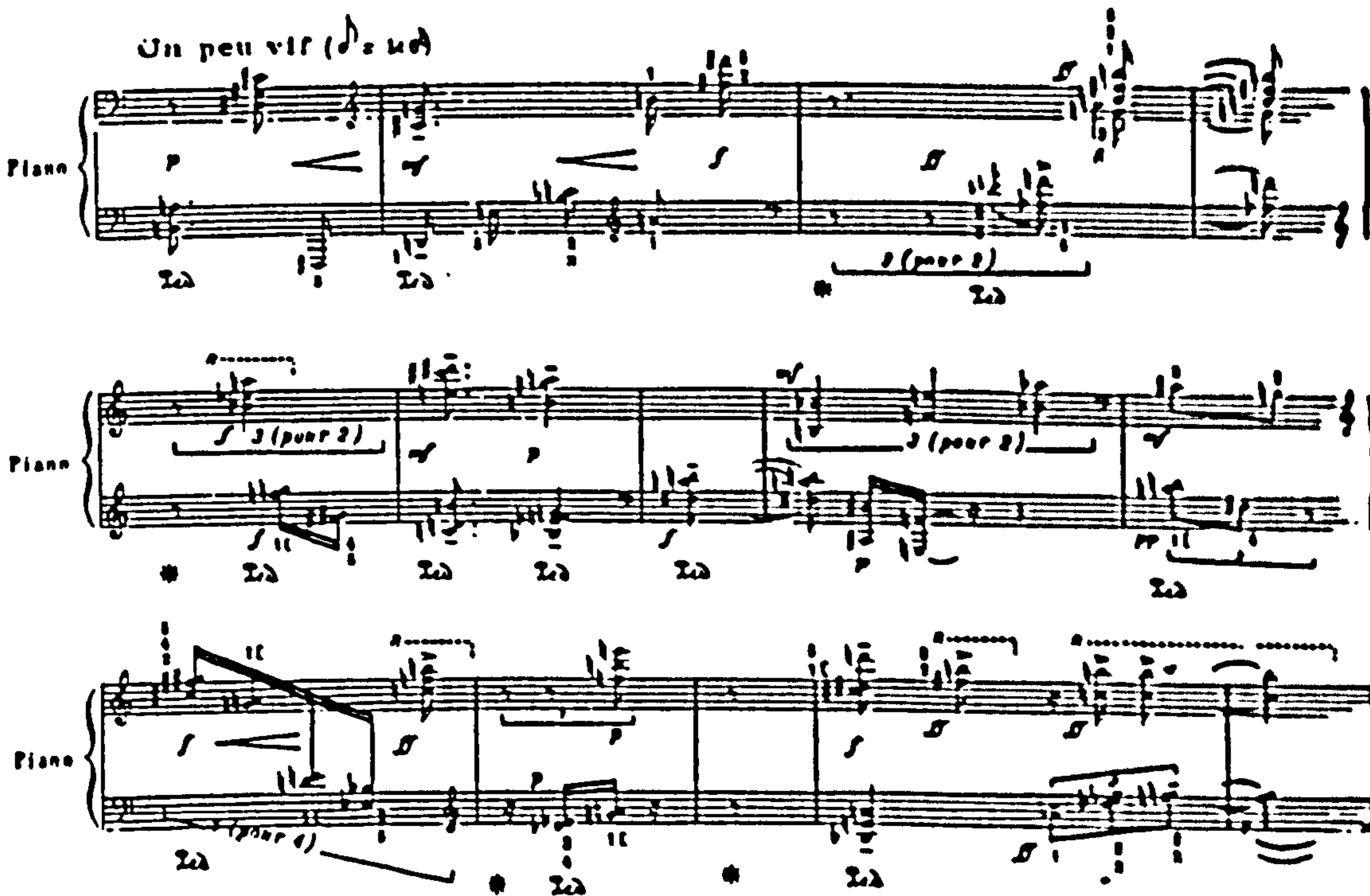


('Yamanaka-Cadenza', Sept Haikai)

IX/16 a) harmonic ostinato of the Indian tree pipit



b) rhythmic continuum in the 1st piano cadenza



c) beginning of great reed warbler's cadenza

Un peu vif (♩ = 120)
 Ô-yoshikiel
 (très rythmé, percute arc dans le grave, aigre et esard dans l'aigu)

21)

Piano

d) comparison with the European great reed warbler

Rousserolle Turdoïde
 Modéré (♩ = 112) (aigre, lourd)

['deux en deux']

(sans péd.)

VI

sur trécle, bruit de ferraille

(sans péd.)

Piano

(a, b, c = 'Les Oiseaux de Karuizawa', *Sept Haikai*)
 (d = 'La Rousserolle Effarvate', *Catalogue*)

IX/17 uguisu's call on woodwind & trumpet ('Les Oiseaux de Karuizawa', *Sept Halkal*) harmonised scandicus

harmonised scandicus

Un peu vite $\text{♩} = 120$

1^{re} FLÛTE

2^e FLÛTE

1^{er} HAUTBOIS

2^e HAUTBOIS

COR ANGLAIS

1^{re} CLARINETTE

2^e CLARINETTE

3^e CLARINETTE

CLARINETTE BASSE

1^{er} BASSON

2^e BASSON

1^{re} TROMPETTE

scandicus

scandicus

scandicus

scandicus

IX/18 idiomatic gamelan sonorities (*Couleurs de la Cité Céleste*)

(68) Bien modéré ($\text{♩} = 99$)

Piano

Gong

Clanches

Gongs

pratâpaçekhara

vijaya

Alleluia du 8^e dim. après Pentecôte

IX/19 a) great kiskadee, coloured by xylophone-trio

4 Un peu vite (♩ = 126) (ballre) *Bébé*

2
8

3 2 2 3
32

3 2 2
32

3 2
32

Clav.

2^e Clav.

3^e Clav.

Piano

Xylo.

Xylo m.

Mar.

Cong.

Claves

b) yellowhead

3 3
32

3 2 2
32

2
8

Piano

Xylo.

Xylo m.

Mar.

Cong.

Claves

Gongs

(Couleurs)

Un peu vite (♩ = 120)
Arapoaga

(arr. de 1910)

Clar.
Fl. Trp.
1^{re} Trp.
2^e Trp.
2 Cors.
1 Trbn.
Piano
Tylu.
Tylorim.
Mar.
Cenc.
Clubes.
Gongs.

IX/21 1^{re} piano cadenza: stripe-backed wren (*Couleurs*)

vif (♩ = 160)
(sans battue)
Troglodyte barré

scandicus

Piano

scandicus

d. dissans

31

Modéré (♩ = 101) Vif (♩ = 160)

Tch basse

(sans battue)

Piano

Stourbelle

3
8

T. tam

2^e T. tam

(étouffer)

Modéré (♩ = 104) Vif (♩ = 160)

Piano

Modéré (♩ = 101) Un peu vif (♩ = 120) Vif (♩ = 160)

Piano

dr. dessus

86 Modéré (♩ = 101) *(sans battue)* Bien modéré (♩ = 92)

Moqueur du Venezuela

Piano

This piano score features two systems of music. The first system is titled 'Moqueur du Venezuela' and is marked 'Modéré (♩ = 101) (sans battue)'. It includes dynamic markings such as *s*, *mf*, and *pp*. The second system is marked 'Bien modéré (♩ = 92)'. The score is written for piano with treble and bass staves. There are asterisks and 'Tad' markings below the bass staff in both systems.

Vif (♩ = 111) Modéré (♩ = 101) Bien modéré (♩ = 92)

Piano

This piano score consists of three systems. The first system is 'Vif (♩ = 111)', the second is 'Modéré (♩ = 101)', and the third is 'Bien modéré (♩ = 92)'. It includes dynamic markings like *mf*, *p*, and *s*. The score is written for piano with treble and bass staves. There are asterisks and 'Tad' markings below the bass staff.

IX/24 outbursts: Amazonian uirapura (*Et Exspecto Resurrectionem Mortuorum*)

Modéré (♩ = 170)

2^e Fl. 1, 2
1^{re} Fl.
3^e Fl.
1^{re} Hb. 1, 2
2^e Hb.
C. angl.
1^{re} Clar.
Clar. 1, 2
2^e Clar.
Cl. basse
1^{er} Bass.
Horn 2, 3

Wirapura, oiseau de l'Amazonie.

1

This orchestral score is for 'Amazonian uirapura' and is marked 'Modéré (♩ = 170)'. It features a full orchestral ensemble including two flutes, three flutes, three oboes, an English horn, first clarinet, two clarinets, a bass clarinet, a first bassoon, and three horns. The score is written for each instrument with treble and bass staves. A rehearsal mark '1' is present at the bottom left.

2 Piccolo Fl.

Fl. 1, 2

3^e Fl.

1^{er} Hrb.

Hrb. 2, 3

C. angl.

Pic. Clar. (Alouette Calandre, oiseau de Grèce et d'Espagne)

Clar. 1, 2

3^e Clar.

Cl. basse

1^{er} B^o

B^o 2, 3

2 Piccolo Fl.

1^{er} Fl.

Fl. 2, 3

1^{er} Hrb.

Hrb. 2, 3

C. angl.

1^{er} Clar.

Clar. 2, 3

Cl. basse

B^o 1, 2

3^e B^o

IX/26 simple song of the blackcap
 (2nd Movement of *Méditations sur le Mystère de la Sainte Trinité*)

Bien modéré

rall. . . .

V.A.:

R: (Fauvette à tête noire)

IX/27 garden warbler's cadenza (2nd 'Meditation')

(Faussette des jardins)

Un peu vite *d. dessus*

Musical score for IX/27 garden warbler's cadenza (2nd 'Meditation'). The score consists of eight staves, each labeled 'MAN' on the left. The first staff includes the instruction 'Pos' and 'mf (non legato)'. The second staff includes 'Un peu vite' and 'd. dessus'. The fourth staff includes 'd. dessus'. The sixth staff includes 'd. dessus'. The seventh staff includes 'd. dessus'. The eighth staff includes 'anapaest' and 'bacchius' with arrows pointing to specific rhythmic patterns in the music. The music is written in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It features complex rhythmic patterns, including triplets and sixteenth notes, and is marked with various dynamics and articulations.

IX/28 varied song of the wren (2nd 'Meditation')

Musical score for IX/28 varied song of the wren (2nd 'Meditation'). The score consists of two systems, each with two staves labeled 'MAN'. The first system includes the instruction 'Pos' and 'f'. The second system includes 'anapaest' and 'bacchius' with arrows pointing to specific rhythmic patterns in the music. The music is written in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It features complex rhythmic patterns, including triplets and sixteenth notes, and is marked with various dynamics and articulations.

IX/29 2nd portrayal of the blackbird's song (2nd 'Meditation')

(Merle noir) Modéré

double-iamb cretic climacus resupinus dactyl climacus resupinus scandicus

MAN

mf

climacus resupinus

MAN

g. dessus

double-iamb 3 iambs iamb

MAN

IX/30 startling cries of the black woodpecker (4th 'Meditation')

Vif (en fusée)

Un peu lent

(fermer brusquement)

MAN

Pos { *f* }

(en fusée)

PP (PP) (PP)

PED

IX/31 a) 'like silk tearing' and other 'snatched', rhythmic motives of the song thrush

Modéré Un peu vif

MAN.

R { *f* }

Modéré Modéré Vif

MAN.

R { *f* } Pos { *mf* }

(comme de la soie déchirée) g. dessus

b) 'like drops of water': song thrush

Modéré

Un peu vif 2 ionic minor metres

MAN. R { pp

(comme des gouttes d'eau)

G { p

('4th 'Meditation')

IX/32 ring ouzel's calls (4th 'Meditation')/3 iambs

Très modéré (Merle à plastron)

Pos. 2

MAN. R:

p

IX/33 a) homorhythmic texture: Tengmalm's owl (4th 'Meditation')

(Chouette de Tengmalm)

Bien modéré

(bourdon 16, bourdon 8, seuls)

MAN. G { mf

p

b) same texture on solo bourdon (concludes the 4th 'Meditation')

Comb. 1

G: flûte harm., bourdon 8, bourdon 16-

Bien modéré

MAN. G { mf

(Chouette de Tengmalm)

(bourdon 16, bourdon 8, seuls)

(>)

MAN. R { ppp

IX/34 simple pitches of the yellowhammer (concluding 5th 'Meditation')

(gambe, voix céleste) **Bien modéré** (long)

R: (m.g.) *PPP* (m.d.)

(bourdon 8) *P* (Bruant jaune) (long)

MAN.

PED.

IX/35 song of the so-called 'oiseau de Persépolis' ('7th 'Meditation')

(oiseau de Persépolis) 2 paeon IV cells

Modéré

MAN. *Pos*

iamb

3 iambs

iamb

double-iamb

iamb

MAN.

m.g. dessus

IX/36 a) cretic rhythm: quail

Caillô
Un peu vite (♩ = 160)

mf

(ped sempre)

Lento (♩ = 60) Vir (♩ = 160) Un peu vir (♩ = 126)

Rossignol

* ra ra

(La Fauvette des Jardins)

LX/37 pink lake at dawn (La Fauvette)

Très lent. (♩ = 36)

pp (extrêmement calme)

ra ra ra ra ra ra

(le lac rose à l'aurore)

p

ra ra ra ra ra ra ra ra ra ra

IX/38 extract from an early solo of the garden warbler (*Lar Fauvette*)

IX/39 a) homorhythmic eruptions of laughter: green woodpecker

Bien modéré (♩ = 100) Vif (♩ = 160) (d. dessous)

b) homorhythmic quartal harmonies: chaffinch

Piéson Un peu vif (♩ = 112) pressez Vif (♩ = 170) Modéré (♩ = 120) (ped sempre)

c) 'jubilant' cries of the skylark

Alouette des champs

Un peu vif (♩ = 144)

Musical score for the first system of 'Alouette des champs'. It features a treble and bass clef with a key signature of one flat. The tempo is 'Un peu vif' with a quarter note equal to 144. The music is marked with 's' (sforzando) and includes performance instructions: '(jubilatoire)', '(ped sempre)', and '(jubilant)'. The notation includes various rhythmic values and dynamic markings.

Musical score for the second system of 'Alouette des champs'. It continues the piece with a 'ped sempre' instruction. The notation includes various rhythmic values and dynamic markings.

(La Fauvette)

IX/40 'harmonic alternator': chaffinch (La Fauvette)

Musical score for IX/40 'harmonic alternator': chaffinch. It features a treble and bass clef with a key signature of one flat. The tempo is 'vif' with a quarter note equal to 176. The notation includes various rhythmic values and dynamic markings.

IX/41 'acidulated' voice: great reed warbler (La Fauvette)

Rousserolle Turdoide

Modéré (♩ = 100) (crie)

Musical score for the first system of IX/41 'acidulated' voice: great reed warbler. It features a treble and bass clef with a key signature of one flat. The tempo is 'Modéré' with a quarter note equal to 100. The music is marked with 'mf (acc)' and includes performance instructions: '(gracie)' and '(crie)'. The notation includes various rhythmic values and dynamic markings.

Musical score for the second system of IX/41 'acidulated' voice: great reed warbler. It continues the piece with a 'mf (acc)' instruction. The notation includes various rhythmic values and dynamic markings.

Musical score for the third system of IX/41 'acidulated' voice: great reed warbler. It includes performance instructions: '(gracie)', '(arrache)', '(acc)', and '(crie)'. The notation includes various rhythmic values and dynamic markings.

IX/42 a) brutal croaks carrion crow

b) 'harsh, dry' alarms red-backed shrike

Corneille
Un peu vite (♩ = 126)

Pie grièche « corcheur (alarme)
Modéré (♩ = 116)

c) repeated calls of the black kite: 'like a whinny'

Milan noir
Un peu vite (♩ = 100)

f

(comme un hennissement)

d) flight of the black kite (opening)

vol du Milan
Modéré, un peu vite (♩ = 132)

p legato

mf

f

(moins à plat)

(La Fauvette)

IX/43 goldfinch's song over D major with an added 6th (La Fauvette)

Chardonneret

IX/44 nightingale announcing sunset (La Fauvette)

Modéré (♩ = 92)

Un peu vite (♩ = 126)

f

mf

f

(clatant)

vite (♩ = 160) harmonic ostinato

cresc.

mf

Très lent (♩ = 46) Moderato (♩ = 120) Très lent (♩ = 44)

(clair et terrifiant) Chouette Hulotte (sec) (clair et terrifiant)

IX/46 Tristram's grackle (Movement Three, *Livre du Saint Sacrement*)

1st Song

Un peu vif Flourneau de Tristram (Ein Gedr entre Massada et la Mer Morte)

MAN MAN MAN

cresc pacon IV iamb pacon IV bacchius cresc

IX/47 Olivaceous warbler (Movement Three, *Livre du Saint Sacrement*)

Un peu vif

MAN

MAN MAN MAN

R pacon IV pacon IV anapaest iamb anapaest iamb ionic minor iamb Extended ionic minor iamb pacon IV Double-iamb

R nazard 2^{ya}, octavin 2. 3^{re} 1^{ya}, tout seuls 1 $\frac{1}{4}$ |

Modéré, un peu lent Ammomant du Désert (désert de Judée, mont de la Quarantaine)

MAN

MAN

MAN

MAN

MAN

MAN

R : cymbale 3 rangs seule $\frac{1}{4}$ |
 G : bourdon 16, montre 8,
 fl harm 8, bourdon 8 |

IX/49 'wind of the desert' (Movement Six, *Livre du saint Sacrement*)

Lent

MAN

MAN

Un peu vif (Hypolais polyglotte)

b) harmonic ostinato in the melodious warbler's song

(Movement Thirteen, *Livre du Saint Sacrement*)

IX/51 tighter cluster chords in the second solo
(Movement Thirteen, *Livre du Saint Sacrement*)

IX/52 a) elaborate, long phrase of the Tristram's grackle

b) cretic rhythms in this song

(Movement Fifteen, *Livre du Saint Sacrement*)

Vif (♩ = 184)

IX/54 white-note chord accompaniment ('Le Rouge Gorge', *Petites Esquisses*)

Modéré (♩ = 88)

IX/55 rich harmonisation of two-pitch cell ('Le Rouge Gorge', *Petites Esquisses*)

Lent (♩ = 54)

IX/56 three main features of 'Le Merle Noir':

a) colour chords with added note values

Un peu lent (♩ = 80)

[Resolution]

b) the song itself

Modéré. (♩ = 112)
un peu vif

noir

ff

Res.

c) widely-spaced chords producing resonance effects

Modéré (♩ = 88)

pp

pp

Res.

('Le Merle Noir', *Petites Esquisses*)

IX/57 features of the song thrush

a) ascending two-part quasi-glissandi

Vif (♩ = 160)

b) harmonic ostinato

Très modéré (♩ = 72)

ff

Res.

c) repeated motive around A major

Res.

d) two-part alternator

Musical score for 'two-part alternator'. It consists of two staves. The top staff has a treble clef and a key signature of one flat (B-flat). The bottom staff has a bass clef. The music features a rhythmic pattern of eighth notes. A dashed box above the first four measures of the top staff indicates a specific section. The bottom staff has a 'Red.' marking below the first measure.

e) three isolated colour chords

Musical score for 'three isolated colour chords'. It consists of two staves. The top staff has a treble clef and a key signature of one flat. The bottom staff has a bass clef. The tempo is marked 'Modéré' with a quarter note equal to 80 (♩ = 80). The music features three distinct chords. A dashed box above the first four measures of the top staff indicates a section. The bottom staff has 'Red.' markings below the first, second, and third measures.

(‘La Grive Musicienne’, *Petites Esquisses*)

IX/58 regular motivic ostinato: skylark (‘L’Alouette des Champs’, *Petites Esquisses*)

Musical score for 'regular motivic ostinato: skylark'. It consists of two staves. The top staff has a treble clef and a key signature of one flat. The bottom staff has a bass clef. The music features a regular motivic ostinato. The tempo is marked 'mp' (mezzo-piano) and 'cresc.' (crescendo). The bottom staff has a 'Red.' marking below the first measure.

('L'Alouette des Champs', Petites Esquisses)

Très vif (♩ = 144)

Vif (♩ = 126)

IX/60 nightingale on

xylophone-trio and

percussion

(Un vitrail et des

Oiseaux)

Un peu lent (♩ = 126) ... Vif (♩ = 116)

Tutti

pp

f

f

Allegro

7

f

Allegro

f

Allegro

f

Allegro

f

Allegro

IX/62 1^{er} song of the blackcap (*Un Vitrail et des Oiseaux*)

(Fauvette à tête noire)
Bien modéré (♩ = 112)

The musical score is arranged in a standard orchestral format with the following parts from top to bottom:

- Flûtes 1 and 2
- Flûte 3
- Fl en Sol
- Hrb 1 and 2
- Hrb 1
- C A
- 1^{er} Clar en sol
- Clar 1 and 2
- Clar 3
- Basson 1
- II Tpt

The score includes dynamic markings such as *f* and *pp*, and articulation marks like accents and slurs. The conductor's part at the bottom features a sequence of numbers: $\frac{2}{3}$, $\frac{3}{16}$, and $\frac{2}{16}$, indicating the number of measures in each bar. The word "tutti" is written above the conductor's staff.

IX/63 extract of birdsong polyphony, including quasi-glissandos of the robin
(Un Vitrail et des Oiseaux)

Musical score for IX/63, featuring 1st Flute, 2nd Flute, 3rd Flute, 1st Clarinet, 2nd Clarinet, 3rd Clarinet, and Piano. The score includes dynamic markings such as *mf*, *p*, and *pp*. Performance instructions include "Un peu vif" and "Modéré". The piano part features a complex rhythmic pattern with many sixteenth notes.

IX/64 'prelude' of the melodious warbler's song (La Ville d'En Haut)

Musical score for IX/64, featuring Violophone, Violoncha, Manimba, and III Cimb wip. The tempo is marked "Presque vif (♩ = 200)". The score includes dynamic markings such as *mf* and *pp*. Performance instructions include "Un peu vif" and "Modéré". The piano part features a complex rhythmic pattern with many sixteenth notes.

IX/65 a) repeated pitches: melodious warbler

[3]

Musical score for 'repeated pitches: melodious warbler'. The score consists of five staves: Xylophone, Xicumba, Marimba, and III Cymba rap. The Xylophone staff features six vertical tick marks. The Marimba staff has a 'p' dynamic marking. The III Cymba rap staff includes two measures with numerical values: $\frac{4}{16}$ and $\frac{2}{16}$. A circled number '3' is positioned above the score.

b) rapid flourishes: melodious warbler

Musical score for 'rapid flourishes: melodious warbler'. The score consists of five staves: Xylophone, Xicumba, Marimba, and III Cymba rap. The Xylophone staff has a dotted line above the first measure. The Marimba staff features a 'p' dynamic marking and a numerical value $\frac{3 \ 3 \ 2}{32}$ below the notes. The III Cymba rap staff has a 'p' dynamic marking.

(La Ville d'en Haut)

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2. Sun, Shu-Wen. 'Birdsong and Pitch-class Sets in Messiaen's "L'Alouette Calandrelle"', for the degree of Doctor of Musical Arts, University of Oregon, 1995.

Discography

- Le Banquet Céleste** - Thomas Trotter (org) - Decca 448 064-2
Préludes - Peter Hill (pf) - Unicorn-Kanchana DKP(CD) 9078
Diptyque - Jennifer Bate (org) - Unicorn-Kanchana DKP(CD) 9004
Trois Mélodies - Michèle Command (sop), Marie-Madeleine Petit (pf) - EMI CMS 7 64092 2
Thème et Variations - Christoph Poppen (vln), Yvonne Loriod (pf) - EMI CDC 7 54395 2
Fantaisie Burlesque - Y. Loriod (pf) - Erato OME 1
Apparition de l'Église-Éternelle - Messiaen (org) 'par lui-même' - EMI CZS 7 67400 2
L'Ascension (orch. version) - Symphonieorchester des Bayerischen Rundfunks conducted by Karl Anton Rickenbacher - Schwann CD 311 015 H1
L'Ascension (org. version) - Jennifer Bate (org) - Unicorn-Kanchana DKP(CD) 9024/25
Piece pour le Tombeau de Paul Dukas - Gloria Cheng (pf) - Koch 3-7267-2H1
La Nativité du Seigneur - Simon Preston (org) - 425 161-2 DM2
Poèmes pour Mi - Jane Manning (sop), David Mason (pf) - Unicorn-Kanchana DKP(CD) 9094
O Sacrum Convivium - London Sinfonietta Chorus conducted by Terry Edwards - Virgin VC 91472-2
Chant de Terre et de Ciel - Jane Manning (sop), David Mason (pf) - Unicorn-Kanchana DKP(CD) 9094
Les Corps Glorieux - Thomas Trotter (org) - Decca 448 064-2
Quatuor pour la Fin du Temps - Ensemble Walter Boeynkens - Harmonia Mundi HMC 90 1348
Rondeau - Peter Hill (pf) - Unicorn-Kanchana DKP(CD) 9144
Visions de l'Amen - Double Edge: Edmund Niemann & Nurit Tilles - NA 045 CD
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Vingt Regards sur l'Enfant-Jésus - Malcolm Troup (pf) - Continuum CCD 1004/5
Harawi - Rachel Yakar (sop), Y. Loriod (pf) - Erato ECD 75501
Turangalîla-symphonie - Y.Loriod (pf), J.Loriod (ondes), Orchestre de l'Opera Bastille conducted by Myung-Whun Chung - DG 431 781-2
Cinq Rechants - Kühn Chamber Soloists conducted by Pavel Kühn - SUPRAPHON 11 0402-2 231
Cantéyodjayâ - Peter Hill (pf) - Unicorn-Kanchana DKP(CD) 9078
Quatre Études de Rythme - Gloria Cheng (pf) - Koch 3-7267-2H1
Messe de la Pentecôte - Gillian Weir (org) - Collins 70312
Livre d'Orgue - Messiaen (org) 'par lui-même' - EMI CZS 7 67400 2
Le Merle Noir - Karheinz Zöller (fl), Aloys Kontavsky (pf) - EMI CDM7 63947 2
Réveil des Oiseaux - Y. Loriod (pf), Czech Philharmonic Orchestra conducted by Vaclav Neumann - SUPRAPHON SUA ST 50749
Oiseaux Exotiques - P. Crossley (pf), London Sinfonietta conducted by Esa-Pekka Salonen - M2K 44762

- Catalogue d'Oiseaux** - Peter Hill (pf) - Unicorn-Kanchana - Books 1-3 DKP(CD) 9062, Books 4-6 DKP(CD) 9075, Book 7 DKP(CD) 9090
- Chronochromie** - Symphonieorchester des Bayerischen Rundfunks conducted by Karl Anton Rickenbacher - Schwann CD 311015 H1
- Verset pour la Fête de la Dédicace** - Jennifer Bate (org) - Unicorn-Kanchana DKP(CD) 9028
- Sept Haïkaï** - Peter Donohoe (pf), Netherlands Wind Ensemble conducted by Reinbert de Leeuw - Chan 9301-2
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- Livre du Saint Sacrement** - Almut Rößler (org) - Motette DCD 1106 1
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