

## Chapter IV.

### COMPOSITION OF THE ORCHESTRA.

#### **Different ways of orchestrating the same music.**

There are times when the general tone, character and atmosphere of a passage, or a given moment in an orchestral work point to one, and only one particular manner of scoring. The following simple example will serve for explanation. Take a short phrase where a flourish or fanfare call is given out above a *tremolando* accompaniment, with or without change in harmony. There is no doubt that any orchestrator would assign the *tremolo* to the strings and the fanfare to a trumpet, never *vice versa*. But taking this for granted, the composer or orchestrator may still be left in doubt. Is the fanfare flourish suitable to the range of a trumpet? Should it be written for two or three trumpets in unison, or doubled by other instruments? Can any of these methods be employed without damaging the musical meaning? These are questions which I shall endeavour to answer.

If the phrase is too low in register for the trumpets it should be given to the horns (instruments allied to the trumpet); if the phrase is too high it may be entrusted to the oboes and clarinets in unison, this combination possessing the closest resemblance to the trumpet tone both in character and power. The question whether one trumpet or two should be employed must be decided by the degree of power to be vested in the given passage. If a big sonorous effect is required the instruments may be doubled, tripled, or even multiplied by four; in the opposite case one solo brass instrument, or two of the wood-wind will suffice (1 Ob. + 1 Cl.). The question whether the *tremolo* in the strings should be supported

by sustained harmony in the wood-wind depends upon the purpose in view. A composer realises his intentions beforehand, others who orchestrate his music can only proceed by conjecture. Should the composer desire to establish a strongly-marked difference between the harmonic basis and the melodic outline it is better not to employ wood-wind harmony, but to obtain proper balance of tone by carefully distributing his dynamic marks of expression, *pp*, *p*, *f* and *ff*. If, on the contrary, the composer desires a full round tone as harmonic basis and less show of brilliance in the harmonic parts, the use of harmony in the wood-wind is to be recommended. The following may serve as a guide to the scoring of wood-wind chords: the harmonic basis should differ from the melody not only in fullness and intensity of tone, but also in colour. If the fanfare figure is allotted to the brass (trumpets or horns) the harmony should be given to the wood-wind; if the phrase is given to the wood-wind (oboes and clarinets) the harmony should be entrusted to the horns. To solve all these questions successfully a composer must have full knowledge of the purpose he has in view, and those who orchestrate his work should be permeated with his intentions. Here the question arises, what should those intentions be? This is a more difficult subject.

The aim of a composer is closely allied to the form of his work, to the aesthetic meaning of its every moment and phrase considered apart, and in relation to the composition as a whole. The choice of an orchestral scheme depends on the musical matter, the colouring of preceding and subsequent passages. It is important to determine whether a given passage is a complement to or a contrast with what goes before and comes after, whether it forms a climax or merely a step in the general march of musical thought. It would be impossible to examine all such possible types of relationship, or to consider the *rôle* played by each passage quoted in the present work. The reader is therefore advised not to pay too much attention to the examples given, but to study them and their bearing on the context in their proper place in the full scores. Nevertheless I shall touch upon a few of these points in the course of the following outline. To begin with, young and inexperienced composers do not always possess a clear idea of what they wish to do. They can improve in this direction by reading

good scores and by repeatedly listening to an orchestra, provided they concentrate the mind to the fullest possible extent. The search after extravagant and daring effects in orchestration is quite a different thing from mere caprice; *the will to achieve is not sufficient; there are certain things which should not be achieved.*

The simplest musical ideas, melodic phrases in unison and octaves, or repeated throughout several octaves, chords, of which no single part has any melodic meaning are scored in various ways according to register, dynamic effect and the quality of expression or tone colour that may be desired. In many cases, one idea will be orchestrated in a different way every time it recurs. Later on I shall frequently touch upon this more complicated question.

*Examples:*

\* *Snegourotchka* [58]; [65] and before [68] — sustained note in unison.

There are fewer possible ways of scoring more complex musical ideas, harmonico-melodic phrases, polyphonic designs etc.; sometimes there are but two methods to be followed, for each of the primary elements in music, melody, harmony, and counterpoint possesses its own special requirements, regulating the choice of instruments and tone colour. The most complicated musical ideas sometimes admit of only one manner of scoring, with a few hardly noticeable variations in detail. To the following example, very simple in structure I add an alternative method of scoring:

*Example:*

No. 175. *Vera Scheloga*, before [35] — a) actual orchestration, \* b) — another method.

It is obvious that the method b) will produce satisfactory tone. But a 3<sup>rd</sup> and 4<sup>th</sup> way of scoring would be less successful, and a continuation of this process would soon lead to the ridiculous. For instance if the chords were given to the brass the whole passage would sound heavy, and the soprano recitative in the low and middle register would be overpowered. If the *F* sharp in the

double basses were played *arco* by 'cellos and basses together it would sound clumsy, if it were given to the bassoons a comic effect would be produced, and if played by the brass it would sound rough and coarse, etc.

The object of scoring the same musical phrase in different ways is to obtain variety either in tone colour or resonance. In each case the composer may resort to the inversion of the normal order of instruments, duplication of parts, or the two processes in combination. The first of these is not always feasible. In the preceding sections of the book I have tried to explain the characteristics of each instrument and the part which each group of instruments plays in the orchestra. Moreover many methods of doubling are to be avoided; these I have mentioned, while there are also some instruments which cannot be combined owing to the great difference in their peculiarities. Therefore, as regards the general composition of the orchestra, the student should be guided by the general principles laid down in the earlier stages of the present work.

The best means of orchestrating the same musical idea in various ways is by the adaptation of the musical matter. This can be done by the following operations: a) complete or partial transference into other octaves; b) repetition in a different key; c) extension of the whole range by the addition of octaves to the upper and lower parts; d) alteration of details (the most frequent method); e) variation of the general dynamic scheme, e. g. repeating a phrase *piano*, which has already been played *forte*.

These operations are always successful in producing variety of orchestral colour.

*Examples:*

No. 176, 177. *Russian Easter Fête* [A] and [C].

*The Christmas Night* [158] and [179].

No. 178—181. *The Tsar's Bride*, Overture: beginning, [1], [2], [7].

*Sadko* [99—101] and [305—307] (cf. Ex. 289, 290, and 75).

No. 182—186. *Tsar Saltan* [14], [17], [26], [28], [34].

No. 187—189. „ „ [181], [246], [220].

\* No. 190—191. *Ivan the Terrible*, Overture [5] and [12].

*Spanish Capriccio* — compare 1<sup>st</sup> and 3<sup>rd</sup> movement.

- \* No. 192—195. *Shéhérazade*, 1<sup>st</sup> movement — beginning of the  
*allegro* [A], [E], [M].  
 „ 3<sup>rd</sup> movement — beginning [A]. [I].  
 „ 3<sup>rd</sup> „ [E], [G], [O].
- \* No. 196—198. *Legend of Kitesh* [55], [56], [62].
- \* No. 199—201. „ „ „ [68], [70], [84].  
 (Cf. also Ex. 213, 214. *Legend of Kitesh* [294] and [312].)
- \* No. 202—203. *The Golden Cockerel* [229], [233].

The process of scoring the same or similar ideas in different ways is the source of numerous musical operations, *crescendo*, *diminuendo*, interchange of tone qualities, variation of tone colour etc., and incidentally throws new light upon the fundamental composition of the orchestra.

### Full *Tutti*.

The word *tutti* generally means the simultaneous use of all instruments, but the word “all” is used relatively, and it must not be inferred that every single instrument must necessarily be employed to form a *tutti*. In order to simplify the following illustrations I will divide the word into two classes, *full tutti* and *partial tutti*, — independently of whether the orchestra is constructed in pairs, in three’s, or a larger number of instruments. I call *full tutti* the combination of all melodic groups, strings, wind, and brass. By *partial tutti* I mean passages in which the brass group only takes part, whether two horns or two trumpets participate alone, or whether two horns are combined with one or three trombones, without tuba, trumpets, or the two remaining horns, etc.:

[	4 Horns,	2 Horns	2 Horns	]
	. . . . .	or 2 Trumpets,	or . . . . .	etc. ]
	. . . . .	. . . . .	3 Trombones	

In both species of *tutti* full wood-wind may be employed or not, according to the register and musical context of the passage. For instance, in the extreme high register it may be essential to include the piccolo; in the low register flutes will be unnecessary, and yet the passage can still be called *tutti*. The inclusion of kettle-drums, harp, and other instruments of little sustaining power, as of the percussion in general, does not come under discussion.

The variety of orchestral operations increases with the number of instruments forming a *tutti*, in fact, so great does it become that it is impossible to consider all combinations. I can only give a few examples of full and partial *tutti*, and leave the reader to draw his own conclusions. Some of these examples fall under the double heading of full and partial *tutti*, and the student is reminded that the *tutti* is used essentially in *forte* and *fortissimo*, rarely in *pianissimo* and *piano* passages.

*Examples:*

*Snegourotchka* [61] and [62] — Partial and full *Tutti*.

„ [231] — Partial *Tutti*, without the trumpets (cf. Ex. 8).

No. 204. *Snegourotchka* [216] — Full *Tutti*.

„ [325—326] — Full *Tutti* and chorus (cf. Ex. 8).

*Sadko* [3], [223], [239] — Full *Tutti* (cf. Ex. 86).

No. 205—206. *Sadko* [173], [177] — Full *Tutti* with chorus, differently scored.

No. 207—208. *The Christmas Night* [184] and [186] — Full *Tutti*, orchestrated in different ways, with and without chorus.

\* *The Tsar's Bride*, Overture [1], [2], [7] — Full and partial *Tutti* (cf. Ex. 179—181).

\* „ „ „ [141] — Full *Tutti*.

\* „ „ „ [177] — „ „

*Pan Voyevoda* [186] and [188] Full *Tutti*.

\* *Antar* [65] — (cf. Ex. 32).

\* No. 209. *Shéhérazade*, 3<sup>rd</sup> movement [M]; cf. also 1<sup>st</sup> movement [A], [E], [H]; 2<sup>nd</sup> movement [K], [P], [R]; 3<sup>rd</sup> movement [G], [O]; 4<sup>th</sup> movement [G], [P], [W] and further on to [Y] (No. 193, 194, 19, 66, 77).

\* *Spanish Capriccio* [B], [F], [J], [P], [V], [X—Z] (cf. Ex. 3).

\* *Russian Easter Fête* [F], [J], before [L], [Y], up to the end.

\* 3<sup>rd</sup> *Symphony*, 1<sup>st</sup> movement [D], [R—T], [X]; 2<sup>nd</sup> movement [A], [E]; 4<sup>th</sup> movement [A], [H], [S].

\* *Sadko*, Symphonic tableau [20—24].

\* *Mlada*, Act III [12] (cf. Ex. 258).

\* For examples of *Tutti* chords, see special Tables at the end of Vol. II.

## ***Tutti* in the wind.**

In many cases the wood-wind and brass groups can form a *tutti* by themselves for periods of varying length. Sometimes this is effected by the wood-wind alone, but more frequently with the support of horns. At other times the horns are found alone without the wood-wind, and, lastly, a *tutti* may be comprised of instruments of each group in varying numbers. The addition of kettle-drums and the rest of the percussion is quite common and constitutes what the Germans call “Janitscharenmusik”, or Turkish infantry music. Violoncellos and double basses playing more or less important *pizz.* notes are often added to wood-wind instruments (*tutti*), likewise the remainder of the strings and the harps; this process renders the sustained notes in the wood-wind more distinct. *Tutti* passages in wood-wind and horns do not produce any great amount of power in *forte* passages, but, on the other hand *tutti* in the brass groups alone may attain an extraordinary volume of tone. In the following examples the formation of pedal notes by strings or wood-wind in no way alters the general character of the *Tutti*:

### *Examples:*

No. 210—211. *Snegourotchka* [149], [151] (compare).

*Tsar Saltan* [14], [17], [26] (cf. Ex. 182—184).

*Pan Voyevoda* [57], [186], [262].

No. 212. *Ivan the Terrible*, Act II [19]; cf. also Act. III [5].

\* No. 213—214. *Legend of Kitesh* [294], [312] (compare).

\* No. 215. *The Golden Cockerel* [116]; cf. also [82] and [84].

\* *Antar* [37] (cf. Ex. 65).

## ***Tutti pizzicato.***

The quartet of strings (*pizzicato*), reinforced occasionally by the harp and piano, may, in certain cases constitute a particular kind of *tutti*, which can only attain any great degree of strength by support from the wood-wind. Without this support it is of medium power, though still fairly brilliant in quality.

*Examples:*

No. 216. *Snegourotchka*, before [128]; cf. also [153] and before [305].

\* No. 217. *Russian Easter Fête* [K]; cf. also [U] and [V].

\* *Spanish Capriccio* [A], [C], before [S], before [P]; cf. also [O] (Ex. 56).

*Mlada*, Act II [15].

\* *Sadko* [220] (cf. Ex. 295).

\* *Legend of Kitesh* [101].

\* No. 218. *The May Night*, Act I, The Mayor's Song — combination of strings, *arco* and *pizz.*

### ***Tutti* in one, two and three parts.**

It often happens that a moderately full orchestral *ensemble* executes a passage composed of one or two harmonic parts, in unison or in octaves. Such melodic phrases call for more or less simple orchestration with the usual doubling of parts, or, in ornamental writing, admit of contrast in tone colouring, occasionally with the addition of sustained notes.

*Examples:*

*Snegourotchka*, before [152], [174], [176].

*The Tsar's Bride* [120—121] (cf. Ex. 63).

*The Golden Cockerel* [215].

\* No. 219—221. *Legend of Kitesh* [142], [144], [147] — 3 part *Tutti*, with different scoring.

\* *Legend of Kitesh* [138], [139] — *Tutti* in one part.

### ***Soli* in the strings.**

Although, in any orchestral piece, numerous instances are to be found of melodies and phrases entrusted to a solo wind instrument (generally the first of each group, wood-wind or brass), solos for stringed instruments, on the other hand, are extremely rare. Whilst the 1<sup>st</sup> violin and 1<sup>st</sup> 'cello are fairly frequently used in this manner, the solo viola is seldom found, and a solo on the double bass is practically unknown. Phrases demanding particular individuality



of expression are entrusted to solo instruments; likewise passages that require extraordinary technique, beyond the scope of the orchestral rank and file. The comparatively weak tone of the solo instrument necessitates light, transparent accompaniment. Difficult virtuoso solos should not be written, as they attract too much attention to a particular instrument. Solo stringed instruments are also used when vigorous expression and technical facility are not required, but simply in order to obtain that singular difference in colour which exists between a solo stringed instrument and strings in unison. Two solo instruments can be coupled together, e. g. 2 *Violins soli*, etc. and in very rare cases a quartet of solo strings may be employed.

*Examples:*

Violin solo:

No. 222—223. *Snegourotchka* [54], [275].

*The May Night*, pp. 64—78.

*Mlada*, Act I [52]; Act III, before [19].

\* *A Fairy Tale* [W].

\* *Shéhérazade*, 1<sup>st</sup> movement [C], [G]; also the passages at the start of each movement.

\* *Spanish Capriccio* [H], [K], [R], and the cadence on p. 38.

\* No. 224. *Legend of Kitesh* [310] — Vn. solo, on harmonic basis of strings *sul ponticello* and wood-wind.

*Snegourotchka* [274], [279] — 2 Vn<sup>s</sup> soli (cf. Ex. 9).

Viola solo:

No. 225. *Snegourotchka* [212].

*Sadko* [137].

\* No. 226. *The Golden Cockerel* [163]; cf. also [174], [177].

Violoncello solo:

*Snegourotchka* [187] (cf. Ex. 102).

*The Christmas Night*, before [29], [130].

*Mlada*, Act III [36].

\* *The Golden Cockerel* [177], [180] (cf. Ex. 229).

Double bass solo:

\* No. 227. *Mlada*, Act II [10—12] — a special instance where the first string is tuned down.

Solo quartet:

*The Christmas Night* [222] — Vn., Viola, 'Cello, D. bass.

\* No. 228. *Tsar Saltan* [248] — Vn. I, Vn. II, Viola, 'Cello.

\* The case of a solo stringed instrument doubled by the woodwind in unison must not be forgotten. The object is to attain great purity and abundance of tone, without impairing the timbre of the solo instrument (especially in the high and low registers), or to produce a certain highly-coloured effect.

*Examples:*

\* *Mlada*, Act II [52] — Vn. + Fl.; Act IV [31] — Viol. + Fl. + Harp.

\* *The Christmas Night* [212] — 2 Vn<sup>s</sup> + Fl. + Small Cl. (cf. Ex. 153).

\* *Pan Voyevoda* [67] — 2 Vn<sup>s</sup> + 2 Ob.; 2 Violas + 2 Cl.

\* *Legend of Kitesh* [306] — Bass cl. + C-fag. (cf. Ex. 10).

” ” ” [309] — Vn. + Fl.

\* No. 229. *The Golden Cockerel* [179] — Vn. + Picc.; 'Cello + Bass cl.

\* As shown in Chap. II, 2 Vn<sup>s</sup> soli or Violin solo + Fl. (Picc.) are often sufficient to double a melody in the upper register.

*Examples:*

*Sadko* [207] — cf. Chap. II, p. 42 and Ex. 24.

\* No. 230. *Russian Easter Fête*, p. 32 — 2 Solo violins (in harmonics).

\* No. 231. *Legend of Kitesh* [297] — 2 Solo violins + Picc.

### Limits of orchestral range.

It is seldom that the entire orchestral conception is centred in the upper register of the orchestra (the 5<sup>th</sup> and 6<sup>th</sup> octaves), still more rarely is it focussed wholly in the lowest range (octaves 1 and —1) where the proximity of harmonic intervals creates a bad effect. In the first case the flutes and piccolo should be used along with the upper notes of the violins, *soli* or *divisi*; in the second

case the double bassoon and the low notes of the bassoons, bass clarinet, horns, trombones and tuba are brought into play. The first method gives brilliant colour, the second combination is dark and gloomy. The contrary would be fundamentally impossible.

*Examples :*

- |  |                  |
|--|------------------|
| <i>Pan Voyevoda</i> [122], [137]                                   | } low register.  |
| <i>Servilia</i> [168], 8 <sup>th</sup> bar. (cf. Ex. 62)           |                  |
| No. 232. <i>The Golden Cockerel</i> [220]; cf. also [218], [219]   |                  |
| * <i>Snegourotchka</i> , before [25]                               | } high register. |
| * <i>Legend of Kitesh</i> , before [34]                            |                  |
| * No. 233. <i>The Golden Cockerel</i> [113], [117]                 |                  |
| * No. 234. <i>Shéhérazade</i> , 2 <sup>nd</sup> movement pp. 59—62 |                  |

The upper and lower parts of a passage can seldom be widely separated without the intermediate octaves being filled in, for this is contrary to the first principles of proper distribution of chords. Nevertheless the unusual resonance thus produced serves for strange and grotesque effects. In the first of the following examples the piccolo figure doubled by the harp and the sparkling notes of the *glockenspiel* is set about four octaves apart from the bass, which is assigned to a single Double bass and Tuba. But in the 3<sup>rd</sup> octave, the augmented fourths and diminished fifths in the two flutes help to fill up the intermediate space and lessen the distance between the two extreme parts, thus forming some sort of link between them. The general effect is fanciful.

*Examples :*

- No. 235. *Snegourotchka* [255].
- \* No. 236.            „            [315], 5<sup>th</sup> and 6<sup>th</sup> bars.
- „            [274] (cf. Ex. 9).
- A Fairy Tale* [A].
- The Golden Cockerel* [179], 9<sup>th</sup> bar. (cf. Ex. 229).

**Transference of passages and phrases.**

A phrase or a figure is often transferred from one instrument to another. In order to connect the phrases on each instrument in

the best possible way, the last note of each part is made to coincide with the first note of the following one. This method is used for passages the range of which is too wide to be performed on any one instrument, or when it is desired to divide a phrase into two different timbres.

*Examples :*

\* *Snegourotchka* [137] — The melody is transferred from the violins to the flute and clarinet (cf. Ex. 28).

\* „ before [191] — Solo violin — Solo 'cello.

*Pan Voyevoda* [57] — Trombones — Trumpets; Horn — Ob. + Cl.

A similar operation is used in scoring passages covering the entire orchestral scale, or a great portion of it. When one instrument is on the point of completing its allotted part, another instrument takes up the passage, starting on one or two notes common to both parts, and so on. This division must be carried out to ensure the balance of the whole passage.

*Examples :*

*Snegourotchka* [36], [38], [131] — Strings.

*The Tsar's Bride* [190] — Wood-wind.

*Sadko* [72] — Strings (cf. Ex. 112).

„ [223] — Strings.

*The Christmas Night*, before [180] — Strings, wind and chorus (cf. Ex. 132).

\* No. 237. *The Christmas Night*, before [181] — String figure.

\* *Servilia* [111] — Strings (cf. Ex. 88).

„ [29], 5<sup>th</sup> bar. — Ob. — Fl.; Cl. — Bass cl., Fag.

No. 238. *The Golden Cockerel*, before [9] — Wood-wind.

\* „ „ „ [5] — Fag. — Eng. horn (+ 'Cellos *pizz.*).

## Chords of different tone quality used alternately.

1. The most usual practice is to employ chords on different groups of instruments alternately. In dealing with chords in different registers care should be taken that the progression of parts, though broken in passing from one group to another, remains as regular

as if there were no leap from octave to octave; this applies specially to chromatic passages in order to avoid false relation.

*Examples:*

No. 239. *Ivan the Terrible*, Act II [29].

No. 240—241. *The Tsar's Bride* [123], before [124].

\* No. 242—243. „ „ „ [178], [179].

\* *Note.* The rules regulating progression of parts may sometimes be ignored, when extreme contrast of timbre between two adjacent chords is intended.

*Examples:*

\* *Shéhérazade*, 8<sup>th</sup> bar from the beginning, (the chromatic progression at the 12<sup>th</sup> bar is undertaken by the same instruments, the 2<sup>nd</sup> cl. is therefore placed above the first in the opening) — cf. Ex. 109.

\* *The Christmas Night*, opening (cf. Ex. 106).

2. Another excellent method consists in transferring *the same chord or its inversion* from one orchestral group to another. This operation demands perfect balance in progression of parts as well as register. The first group strikes a chord of short value, the other group takes possession of it simultaneously in the same position and distribution, either in the same octave or in another. The dynamic gradations of tone need not necessarily be the same in both groups.

*Examples:*

*Ivan the Terrible*, commencement of the overture (cf. Ex. 85).

No. 244. *Snegourotchka* [140].

## **Amplification and elimination of tone qualities.**

The operation which consists in contrasting the resonance of two different groups (\* or the different timbres of one and the same group), either in sustained notes or chords, transforms a simple into a complex timbre, suddenly, or by degrees. It is used in establishing a *crescendo*. While the first group effects the *crescendo* gradually, the second group enters *piano* or *pianissimo*, and attains its *crescendo* more rapidly. The whole process is thereby rendered more tense as the timbre changes. The converse operation—the transition from a complex to a simple timbre, by the suppression of one of the groups, belongs essentially to the *diminuendo*.

*Examples:*

- No. 245. *Snegourootchka* [313].  
 „ [140] (cf. Ex. 244).  
*A Fairy Tale* [V].  
*Shéhérazade*, 2<sup>nd</sup> movement [D] (cf. Ex. 74).  
 \* „ 4<sup>th</sup> movement p. 221.  
 No. 246. *Servilia* [228]; cf. also [44].  
*The Christmas Night* [165] (cf. Ex. 143).  
 No. 247. *The Tsar's Bride*, before [205].  
 \* No. 248. *Russian Easter Fête* [D].  
 \* No. 249—250. *Legend of Kitesh* [5], [162].

**Repetition of phrases, imitation, echo.**

As regards choice of timbre, phrases in imitation are subject to the law of register. When a phrase is imitated in the upper register it should be given to an instrument of higher range and *vice versa*. If this rule is ignored an unnatural effect will be produced, as when the clarinet in its upper range replies to the oboe in the lower compass etc. The same rule must be followed in dealing with phrases, actually different, but similar in character; repeated phrases of different character should be scored in a manner most suitable to each.

*Examples:*

- The Tsar's Bride* [157], [161].  
*Legend of Kitesh* [40—41].  
 \* No. 251. *Spanish Capriccio* [S].

In echo phrases, that is to say imitation entailing not only decrease in volume of tone but also an effect of distance, the second instrument should be weaker than the first, but the two should possess some sort of affinity. An echo given to muted brass following the same phrase not muted produces this distant effect. Muted trumpets are eminently suited to echo a theme in the oboes; flutes also may imitate clarinets and oboes successfully. A wood-wind instrument cannot be used to echo the strings, or

*vice versa*, on account of the dissimilarity in timbre. Imitation in octaves (with a decrease in resonance) creates an effect resembling an echo.

*Examples:*

*Ivan the Terrible*, Act III [3].

No. 252. *Sadko* [264].

\* *Spanish Capriccio* [E]. — This example is not precisely an echo but resembles one in character (c. Ex. 44).

\* *Shéhérazade*, 4<sup>th</sup> movement before [O].

***Sforzando-piano* and *piano-sforzando* chords.**

Besides the natural dynamic process of obtaining these marks of expression, a process which depends upon the player, they may also be produced by artificial means of orchestration.

a) At the moment when the wood-wind begins a *piano* chord, the strings attack it *sforzando*, a compound chord for preference, either *arco* or *pizz.* In the opposite case the *sf* in the strings must occur at the end of the wood-wind chord. The first method is also employed for a *sf-dim.*, and the second for a *cresc.-sf.* effect.

b) It is not so effective, and therefore less frequent to give the notes of sustained value to the strings, and the short chords to the wood-wind. In such cases the *tenuto* chord is played *tremolando* on the strings.

*Examples:*

*Vera Scheloga*, before [35], [38], 10<sup>th</sup> bar.

\* No. 253. *Legend of Kitesh*, before [15--16].

\* *Shéhérazade*, 2<sup>nd</sup> movement, [P], 14<sup>th</sup> bar.

**Method of emphasising certain notes and chords.**

In order to stress or emphasise a certain note or chord, besides the marks of expression  $\text{—}$  and *sf*, chords of 2, 3, and 4 notes can be inserted into the melodic progression by the instruments of the string quartet, each playing a single note; short notes in the wood-wind may also be used as well as a chain of three or





## Diverging and converging progressions.

In the majority of cases, diverging and converging progressions simply consist in the gradual ascent of the three upper parts, with the bass descending. The distance separating the bass from the other parts is trifling at first, and grows by degrees. On the other hand, in converging progressions, the three upper parts, at first so far distant from the bass, gradually approach it. Sometimes these progressions involve an increase or a decrease in tone. The intermediate intervals are filled up by the introduction of fresh parts as the distance widens, so that the upper parts become doubled or trebled. In converging progressions the tripled and doubled parts are simplified, as the duplicating instruments cease to play. Moreover, if the harmony allows it, the group in the middle region which remains stationary is the group to be retained, or else the sustained note which guarantees unity in the operation. Below, the reader will find double examples of both descriptions. The first pair represents a diverging progression, 1. *piano*, in which the human voice takes part; 2. a purely orchestral *crescendo*. The second depicts two similar diverging progressions, firstly a gradual *crescendo*, secondly *dim.*, during which the strings become more and more divided as the wind instruments cease to play. Ex. 258. accompanies the apparition of Mlada, Ex. 259, its disappearance. The atmosphere and colouring are weird and fanciful. The third pair of examples forms instances of converging progressions. In the first (Ex. 260) Princess Volkhova relates the wonders of the sea. Then in the middle of a powerful orchestral *crescendo* the Sea-King appears (Ex. 261). Both examples include a sustained stationary chord of the diminished seventh. The handling of such progressions requires the greatest care.

### Examples:

No. 256—257. *The Tsar's Bride* [102] and [107].

No. 258—259. *Mlada*, Act III [12] and [19].

No. 260—261. *Sadko* [105] and [119].

*Sadko* [72] (cf. Ex. 112).

„ before [315].

\* *The Christmas Night*, beginning (cf. Ex. 106).

\* No. 262. *Antar*, end of 3<sup>rd</sup> movement.

*Note.* A sustained note between the diverging parts does not always allow the empty space to be more completely filled up.

*Example:*

No. 263. *The Golden Cockerel*, before 106.

## Tone quality as a harmonic force.

### Harmonic basis.

Melodic design comprising notes foreign to the harmony, passing or grace notes, embellishments etc., does not permit that a florid outline should proceed at the same time with another one, reduced to essential and fundamental notes:



If, in the above example, the upper part is transposed an octave lower, the discordant effect produced by the contact of appoggiaturas and fundamental notes will be diminished; the quicker the passage is played the less harsh the effect will be, and *vice versa*. But it would be ill-advised to lay down any hard and fast rule as to the permissible length of these notes. There is no doubt that the harmonic notes, the thirds of the fundamental one (*E*) are more prominent from their proximity with the notes extraneous to the harmony. If the number of parts is increased (for instance, if the melodic figure is in thirds, sixths etc.), the question becomes still more complicated, since, to the original harmonic scheme, chords with different root bases are added, producing false relation.

Nevertheless, for the solution of such problems, orchestration provides an element of the greatest importance: difference of timbres. The greater the dissimilarity in timbre between the harmonic basis on the one hand and the melodic design on the other, the less discordant the notes extraneous to the harmony

will sound. The best example of this is to be found between the human voice and the orchestra, next comes the difference of timbres between the groups of strings, wood-wind, plucked strings and percussion instruments. Less important differences occur between wood-wind and brass; in these two groups, therefore, the harmonic basis generally remains an octave removed from the melodic design, and should be of inferior dynamic power.

*Examples of harmonic basis in chords:*

No. 264. *Pan Voyevoda*, Introduction.

*Legend of Kitesh*, Introduction (cf. also Ex. 125 and 140).

\* *Mlada*, Act III [10].

The harmonic basis may be ornamental in character, in which case it should move independently of the concurrent melodic design.

*Examples:*

\* No. 265—266. *Tsar Saltan* [103—104], [128], [149], [162—165] (cf. below).

Chords the most widely opposed in character may be used on a simple, stationary harmonic basis, a basis, founded, for example, on the chord of the tonic or diminished seventh.

*Examples:*

No. 267. *Legend of Kitesh* [326—328] — Wood-wind and harps on a string basis.

No. 268—269. *Kashtcheï the Immortal* [33], [43].

No. 270. *Mlada*, Act II, before [17], [18], [20].

No. 271. *The Golden Cockerel* [125] — Chords of the diminished seventh, on arpeggio basis (augmented fifth).

The effect of alternating harmony produced between two melodic figures, e. g. one transmitting a note, held in abeyance, to the other, or the simultaneous progression of a figure in augmentation and diminution etc. becomes comprehensible and pleasant to the ear when the fundamental sustained harmony is different.

*Examples:*

*Legend of Kitesh* [34], [36], [297] (cf. Ex. 34 and 231).

No. 272—274. *Tsar Saltan* [104], [162—165] (cf. also [147—148]).

\* *Russian Easter Fête*, before [V].

The whole question as to what is allowed and what forbidden in the employment of notes extraneous to the harmony is one of the most difficult in the whole range of composition; the permissible length of such notes is in no way established. In absence of artistic feeling, the composer who relies entirely on the difference between two timbres will often find himself using the most painful discords. Innovations in this direction in the latest post-Wagnerian music are often very questionable; they depress the ear and deaden the musical senses, leading to the unnatural conclusion that what is good, taken separately, must necessarily be good in combination.

### Artificial effects.

I apply this name to some orchestral operations which are based on certain defects of hearing and faculty of perception. Having no wish to specify those that already exist or to foretell those which may yet be invented, I will mention, in passing, a few which have been used by me in my own works. To this class belong *glissando* scales or arpeggios in the harp, the notes of which do not correspond with those played simultaneously by other instruments, but which are used from the fact that long *glissandi* are more resonant and brilliant than short ones.

*Examples:*

*Snegourotchka* [325] (cf. Ex. 95).

No. 275. *Pan Voyevoda* [128].

\* *Shéhérazade*, 3<sup>rd</sup> movement [M], 5<sup>th</sup> bar (cf. Ex. 248).

\* *Russian Easter Fête* [D] (cf. Ex. 248).

\* Enharmonic *glissando* in the strings should also be mentioned.

No. 276. *The Christmas Night* [180], 13<sup>th</sup> bar — 'Cellos *glissando*.

## Use of percussion instruments for rhythm and colour.

Whenever some portion of the orchestra executes a rhythmic figure, percussion instruments should always be employed concurrently. An insignificant and playful rhythm is suitable to the triangle, tambourine, castanets and side drum, a vigorous and straightforward rhythm may be given to the bass drum, cymbals and gong. The strokes on these instruments should almost invariably correspond to the strong beats of the bar, highly-accented syncopated notes or disconnected *sforzandi*. The triangle, side drum and tambourine are capable of various rhythmic figures. Sometimes the percussion is used separately, independently of any other group of instruments.

The brass and wood-wind are the two groups which combine the most satisfactorily with percussion from the standpoint of colour. The triangle, side drum, and tambourine go best with harmony in the upper register; cymbals, bass drum and gong with harmony in the lower. The following are the combinations most generally employed: *tremolo* on the triangle and tambourine with trills in wood-wind and violins; *tremolo* on the side drum, or cymbals struck with drum sticks, and sustained chords on trumpets and horns; *tremolo* on the bass drum or the gong with chords on trombones or low sustained notes on 'cellos and double basses. It must not be forgotten that the bass drum, cymbals, gong and a *tremolo* on the side drum, played *fortissimo*, is sufficient to overpower any orchestral *tutti*.

\* The reader will find instances of the use of percussion instruments in any full score, and in several examples of the present work.

### Examples:

\* *Shéhérazade* pp. 107—119, also many passages in 4<sup>th</sup> movement:

\* *Antar* [40], [43] (cf. Ex. 73, 29).

\* *Spanish capriccio* [P] (cf. Ex. 64); the cadences to be studied in the 4<sup>th</sup> movement, where they are accompanied by various percussion instruments.

\* *Russian Easter Fête* [K] (cf. Ex. 217).

\* *The Tsar's Bride* [140].

\* *Legend of Kitesh* [196—197] — “The Battle of Kerjémetz”.

\* *Pan Voyevoda* [71—72].

## Economy in orchestral colour.

Neither musical feeling nor the ear itself can stand, for long, the full resources of the orchestra combined together. The favourite group of instruments is the strings, then follow in order the wood-wind, brass, kettle-drums, harps, *pizzicato* effects, and lastly the percussion, also, in point of order, triangle, cymbals, big drum, side drum, tambourine, gong. Further removed stand the celesta, *glockenspiel* and xylophone, which instruments, though melodic, are too characteristic in timbre to be employed over frequently. The same may be said of the piano and castanets. A quantity of national instruments not included in the present work may be incorporated into the orchestra; such are the guitar, the domra, zither, mandoline, the oriental tambourine, small tambourine etc. These instruments are employed from time to time for descriptive-aesthetic purposes.

These instruments are most frequently used in the above-named order. A group of instruments which has been silent for some time gains fresh interest upon its reappearance. The trombones, trumpets and tuba are occasionally *tacet* for long periods, the percussion is seldom employed, and practically never all together, but in single instruments or in two's and three's. In national dances or music in ballad style, percussion instruments may be used more freely.

After a long rest the re-entry of the horns, trombones and tuba should coincide with some characteristic intensity of tone, either *pp* or *ff*; *piano* and *forte* re-entries are less successful, while re-introducing these instruments *mezzo-forte* or *mezzo-piano* produces a colourless and common-place effect. This remark is capable of wider application. For the same reasons it is not good to commence or finish any piece of music either *mf* or *mp*. The scope of the musical examples in this work does not permit of illustrating by quotation the use of economy in orchestral colour, nor the re-entry of instruments thrown into prominence by prolonged rests. The reader must examine these questions in full scores.