

And from information supplied by correspondents it is clear that colonies exist right through the forests of the west, from their ocean boundary, on the one side, to their limitations on the Canterbury ranges on the other.

To the student of Nature famishing for work on some deeply absorbing subject I heartily recommend the kakapo.

The next talk which Mr. O'Donoghue will give will be about the "Kakaho," the so-called New Zealand crow, a most interesting bird.

MR. F. R. SNAPE (an A.W.A. wireless operator) has returned to Sydney from Willis Island, the loneliest radio station in the world. Situated 400 miles east of Cooktown, Willis Island is a tiny strip of sand, but it is of great value, being close to the place of origin of cyclones. In the cyclone season (November to May) a Commonwealth meteorologist lives on the island, with two wireless operators, whose duty is to send warnings of storms and weather reports, for the benefit of towns and shipping on the Queensland coast. Mr. Snape has been relieved after twelve months. So far off the beaten track of shipping is Willis Island that in the seven years during which the station has been established there, only three ships have been seen by the operators other than the relief ships.

Evolution of the Modern Orchestra

(Continued from page 1.)

and that is why in Beethoven's symphonies he has to use the horns and trumpets so sparingly and nearly always on the tonic or the dominant. Those who are impressed by Wagner's gorgeous use of the brass might remember that if Beethoven had written such passages they could not have been played upon the instruments of his day.

In the seventeenth and eighteenth centuries it was usual to fill in the harmony on the harpsichord and the composer often would conduct his work at the harpsichord. Mozart conducted an early opera of his in Italy in this manner. It was Gluck (1714-1787) who finally abolished the harpsichord from the orchestra, but when the conductor used to preside at the harpsichord there used to be frequent disputes between him and the leader of the first violins—who, in Germany, is called the "Konzert-meister"—as to which was the more important.

The conductor who developed into the dominating force he has now become only during the nineteenth century, has to-day perhaps usurped too many functions, and the leader of the orchestra has too little to do outside

the actual leading of the orchestra during performances. Berlioz and Wagner were largely responsible for the development of the art of the conductor, but von Bulow was perhaps the first of the modern virtuoso conductors.

It is interesting to note the difference in numbers and proportions between the orchestra of the time of Haydn and Mozart and that of the present day. Their orchestra was usually about thirty-five in number, the wind percussion amounting to from eleven to thirteen of these. I will put into two separate columns the constitution of the Dresden Opera Orchestra of 1754 and the present B.B.C. Symphony Orchestra:—

	Dresden Opera House, 1754	B.B.C. Symphony Orchestra
1st violins	8	16
2nd violins	7	16
Violas	4	10
Violoncellos	3	10
Double Basses	3	8
Piccolo	—	1
Flutes	2	2
Oboes	5	2
Cor Anglais	—	1
Clarinets	—	2
Bass Clarinet	—	1
Bassoons	5	2
Contra-bassoon	—	1
Horns	2	4
Trumpets	3	3
Trombones	—	3
Tuba	—	1
Timpanis	3	1
Percussion	—	2
Harp	—	1

Although no cymbals, triangle, harp or trombones appear in the list of the Dresden Orchestra of 1754, these instruments were well known at that time and were all used, for example, by Gluck.

The most striking feature of the comparison is the different proportions. The Dresden orchestra contained twelve wood-wind instruments as against our B.B.C. orchestra of exactly the same number, whereas the B.B.C. orchestra has more than double the number of strings. But I think almost everyone admits that our modern orchestras are normally too weak in the wood-wind. When the wood-wind is used principally to give its characteristic colour effects and piercing ejaculations, as it is by composers such as Richard Strauss in "Till Eulenspiegel" and Stravinsky in "Petrouchka," this does not matter, because modern composers have made a special study of instrumentation and are accustomed to the present proportions of our orchestras; but when the instruments are used merely as voices in part-writing then the weakness of the wood-

wind section of the orchestra is often apparent.

For the sake of the art of music it is to be hoped that the design of modern instruments and the composition of the orchestra will now remain much the same for some considerable period. The modern composer has all the means he needs, for he has not anything like mastered their possibilities as yet and we find to-day the most advanced and intelligent composers, such as Stravinsky, for example, writing for smaller groups of instruments. Also individual virtuosity has reached such a pitch that executants can be found who can play anything that is within the compass of their instrument. It is the artist not the mechanician—whether maker or player of instruments or maker of music to be played—that needs cultivating and developing to-day, for we are in danger of being as backward artistically as we are advanced mechanically and in material means.

Let me conclude by describing what I think an orchestra should be. In the first place, it should be permanent, connected preferably with an opera house, and having a pension scheme for members who have served a certain number of years. The members should be liable to dismissal by the conductor for incompetence or slackness. It should be carefully drilled—and I don't see why the leader should not take a part in this training—until its ensemble is always perfect.

Berlioz said that no section of an orchestra should be allowed to take place in an ensemble before it has been heard and severely examined separately.

It should always play perfectly in tune (this is always possible if players take precautions and keep their instruments warm). Perfect ensemble and perfect intonation are the mere beginning; then, an orchestra must be able to play piano with every possible nuance; then, a real artist must train the orchestra in truth of expression for every particular work to be performed. And then we come to one fundamental test of good orchestral playing, rhythm. I said at the beginning that the word "orchestra" means in the Greek "dancing place." Now, with a first-class orchestra and conductor, the music always dances itself along. There is no mistaking this springiness, this dancing elasticity of rhythm.

Given perfect ensemble, perfect intonation, and truth of expression, then the final crown of a good orchestra is this dancing magic which transforms the whole material of sound into pure ecstatic motion; but it is the rarest thing to hear. As an example of what can be done by training we have only to hear the Berlin Philharmonic Orchestra.

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