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Earthquakes, their Cause and Effect

THE recent severe local earthquake at Arthur's Pass prompted the request by 3YA to Mr. H. T. Skey, Director of the Magnetic Observatory, Christchurch, to deliver a talk on Earthquakes, their cause and effects. As earth tremors and volcanic action are of general interest to New Zealanders, this paper is reproduced for the benefit of permanent record and the interest of those who did not hear it.



WHAT is an earthquake; also why? Well, most of us have felt one: things move, there is some noise, and we are glad it is over, for us; and next morning we look at the papers to see whereabouts it did most damage, and we naturally conclude that near there the trap went off, in the upper rocks of the earth's crust, and that there a large amount of "potential," or stored energy, suddenly became freed, or "kinetic," and had to spread out and distribute itself throughout the earth. Energy, we know, is the capacity of doing work, and so when the energy stored at a point becomes freed it immediately sets about doing work. How, then, does the energy become fixed, and how does it become freed?

MODERN science teaches us that the earth is almost entirely solid, with the exception of the sea on its surface. On the land, elevations are formed with mountains and valleys. The mountains have weight and must be supported by their stiffness and the stiffness of their surroundings. At the bottom of a large mountain such as Mount Rolleston the stress in the rock is tremendous, and it is not until a depth of about sixty miles below the surface is reached that the stress is uniform: this is called the depth of compensation, or the depth of the isostatic layer, because it is found that the total mass of rock above every large block of it is practically the same. Hence, under mountains the density of the material is less than under low plains or large valleys, and as the mountains become lower through denudation they

must tend to rise, but to a less extent than they are denuded: hence denudation is a great cause of stress changes in the rock in mountainous country, and when in any part the stress exceeds the strength of the rocks that bear it and are elastically strained by it, even as the wound-up spring of a clock is strained, then the breaking point is reached, and an earthquake occurs. Very often the release of strain is accompanied by a marked dislocation of the strata, forming what is known as a fault, and in some cases the relative levels of the rocks on either side of a fault or crack may be altered by many feet, and the fault may extend to a length of over a hundred miles. In the great Californian earthquake of 1906 the fault movement occurred along the northern half of an already existing fault line, the San Andreas fault, which had been traced to a length of over six hundred miles.

IN the case of the recent earthquake near Arthur's Pass, and its after-shocks, the actual fault movement could not be identified on the surface, and can only be located precisely by the aid of field seismographs. The actual damage sustained at Arthur's Pass was confined to chimneys and fireplaces: one large concrete building sustained some cracks; the railway ballasting settled in parts and had to be made up; cracks appeared in filled-in roadways, and there were numerous rockfalls where the material had been insecure, along the valley of the Bealey river. There was no structural damage to the Arthur's Pass—Otira tunnel. In the Riviera earthquake of 1887 the shock was very weak, or not

felt at all in the tunnels of the Nice to Genoa Railway, and none of the tunnels was damaged in the slightest degree, which is very reassuring.

AT Arthur's Pass the settlement is built largely on filled-in or made ground and in this an earthquake wave would have a much larger amplitude of movement than in the solid rock. It is this fact that contributed largely to the damage that did occur. At Otira, almost no structural damage was caused, and it is quite possible that the settlement was shaded from the earthquake waves, as frequently happens, even in railway cuttings of fair depth.

IN the largest earthquake shock at Arthur's Pass the energy was set free at 10hrs. 50min. 30secs. p.m. on March 9 last, while at the Observatory here (Christchurch), nothing happened till 10hrs. 50min. 42secs., and we know that the earthquake effect took about 12 seconds to travel from the origin to Christchurch, travelling through the earth just as a sound travels through a substance; and like the sound it travelled as a wave through the earth, in fact the first effect to reach us from an earthquake origin is just sound waves, mostly of extremely low pitch and mostly too low to be heard by us (except by the way objects are moved against one another), but near the origin higher pitched waves are heard as a roaring or rushing sound. But in an earthquake besides the sound waves produced at the origin, there are other kinds of waves produced in the earth. Chief

—Continued on page 2.

Earthquakes

(Continued from cover.)

among these is the "transverse" wave, which also travels out from the origin to carry away the energy that is freed. In this wave the movements of the earth particles in the advancing wave are at right angles to the direction in which the energy is travelling, while in the sound wave, or the "longitudinal" wave, as it is called, the relative movements of the particles in the advancing wave are to and fro, but in the same direction as the energy is travelling, so that it is a wave of compression, whereas the action in the transverse wave is a shearing action. Now, in all ordinary matter the resistance offered by the matter to a shearing action is less than the resistance offered to a compression, and thus it comes about that in the earth the transverse wave travels at a lower velocity than the sound wave does, in fact, at little more than half the velocity. At any observatory the times of arrival of these two waves of energy is observed on an earthquake recorder or seismograph, and from the time-difference, or the length of time elapsing between their respective arrivals, a very close estimate may be made of the distance of the observatory from the earthquake origin.

wards from the origin at even a slower speed than the transverse waves travel through the earth, and also help in the same way in obtaining an estimate of the distance of the observing station from the earthquake origin.

NOW for a few figures. It is found that the longitudinal or sound-wave takes nearly 23 minutes to go through the earth from one side to the other or along a diameter of the earth; they can go through anything, solid, or even liquid, hard or soft. But it is found that the transverse wave cannot go right through the earth in the same way, that is, through the earth's centre, because about two-fifths of the way down from the surface to the centre there appears to be a layer of matter that is too plastic or soft to resist a shearing action, so that the transverse wave cannot get through it; what happens to a transverse wave when it somewhat obliquely reaches this layer is that the wave is broken up; part of the energy of the wave is reflected and carried upwards again, and part of the energy is refracted down through the soft layer as a sound wave which travels on past the centre of the earth again encounters the soft layer, and, in passing through it the second time, is refracted and goes on upward through the harder material, partly as a transverse wave, and it ultimately reaches the surface and can be recorded there by a seismograph. The time it takes to travel is, of course, reduced because it has travelled through the earth's central core as a longitudinal or sound wave.

THE surface "long waves" from an earthquake origin take, it is found, nearly three hours to go right round the earth and return to their starting point; this they sometimes do repeatedly in the same earthquake. When an earthquake shock has occurred, we have these three sets of waves which go out from the origin, and among them carry away nearly all of the energy set free by the earthquake, and we naturally want to know what hap-

pens to them. Fortunately, the earth's material is not perfectly elastic, and it is not all the same; hence it happens that the waves die down; through friction and heat dissipation by conduction during the wave action in the earth, the whole of the energy of the waves becomes gradually converted into heat, and ultimately is spread throughout the earth; the earth becomes warmer ever so slightly, but this is hardly an adequate compensation for the loss of fifty thousand lives and immense damage to property, such as happened in the great Lisbon earthquake of November 1, 1755, which was severely felt over a great part of Europe. Three shocks and three sea-fixes occurred within about seven minutes of time. The shocks actually were felt over an elliptic area extending from the Canary Islands to Finland, with a width stretching from the north-west of Ireland to the Adriatic Sea.

Contrast this with New Zealand, where only two or three persons have lost their lives through earthquake action since the arrival of the European on these shores.

BESIDES faulting or fracture of the rocks, other causes of earthquakes are earth-slips and volcanic activities. Earth-slips strike a blow by the fall of the great mass of the slip; they are especially liable to happen at sea off the mouths of great rivers, which bring down matter denuded from the land and deposit it in the relatively still water of the sea, forming deltas, and often steep banks are formed under the surface of the sea, which easily break away.

VOLCANIC action is itself due to pressure movements in the earth's crust as a rule, and so is only a secondary cause of earthquakes. Volcanic earthquakes usually have origins quite near the surface of the earth; it is almost certain that the main volcanoes are a kind of insurance against the growth of immense stresses in the earth's crust, which ultimately would cause earthquakes of extremely disastrous extent.

The late Dr. Omori, a great Japanese seismologist, from an immense number of observations drew a graph of the precipitation on the western ranges of Japan; he also drew a graph of the frequency of earthquakes in a certain large area in Japan, for the same time; the parallelism of the two graphs was astonishing, and showed definitely that earthquake occurrence is determined very largely by the unequal loading of the earth's crust and the consequent tendency to isostatic action therein.

FROM earthquake data contributed by observations at a great number of places on the world's surface, Professor Turner, of Oxford, with his assistants, has determined the depths of origin of many large earthquakes of recent years; he finds that some appear to originate at depths up to one twenty-fifth of the earth's radius, much below the proved depth of compensation in the earth's crust. One would hardly expect the earth's substance below the depth of compensation to be fragile or breakable, or that stresses could accumulate in it, as it becomes of importance that, in civilised countries, any earthquakes occurring should have their depths of origin determined as accurately as possible on the spot, by the use of proper seismographs of modern type.

Baird Television

Visit of an Expert

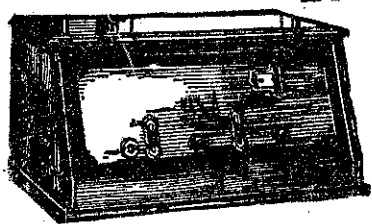
An interview at Fremantle with Major J. M. Macullich, of London, suggests the great possibilities of television. Major Macullich, who reached Fremantle on the liner Orama from London, is a wireless and television expert. He is nominee director of Baird's Television Co., and will organise television in Australia.

Returning from the war a wounded man who would never enjoy perfect health again, Major Macullich, under medical advice, took up a hobby. With wireless telegraphy he occupied his time on the Riviera, in Spain, and in Italy. His hobby grew until it became his business, and he became known after his return to England as an expert in wireless telegraphy and television. His mission at the present time is to place television in several of its phases into operation in Australia and New Zealand.

"At present," Major Macullich said, "my plans are very nebulous. The Commonwealth Government's action in entering the broadcasting field is one which I must study carefully before I announce any plan of operation, but I feel certain that before long television will be in operation in Australia."

Commenting on the latest developments in television, Major Macullich said that tremendous strides had been made in the last few months. The value of the invention was so tremendous that private experiments were being made secretly in London in order to effect improvements. It was now possible to sit quietly at home and listen to a famous opera singer, and at the same time watch him as he acted his scene. It was possible, though it was not actually done, to telephone to a store hundreds of miles away, see, select the goods required, and place an order without leaving home. A furniture dealer could select tapestry or a society woman an expensive frock by telephone. There were no limits to the possibilities of the invention.

Commenting on the invention the Melbourne "Argus" asks: "What is television? Can it be kept within bounds as a good servant, or will it eventually become a bad master? Thoughts such as this are provoked by the arrival at Fremantle of Major Macullich, an expert in television, who has come to explore the ground with a view to introducing the invention to Australia. Doubters would like to be assured just how far the system will go. Will one be able to ring up, or otherwise conjure up, an unwilling 'televisee,' just as the person with an ordinary telephone can unexpectedly call anyone to-day? It is one thing to be called; it is another to be seen. One may compose one's voice over a wire, no matter what one's state of deshabille, but it would be both embarrassing and undignified to be seen actually thus unprepared. It is always proper for little children to be seen and not heard, though modern children never are; but there are times when adults would fain be heard and not seen. And what of one's privacy at home or in the office if any and every caller by television could instantly see everything going on within range of the person called? This new industry is pre-eminently one in which 'safeguarding' is called for."



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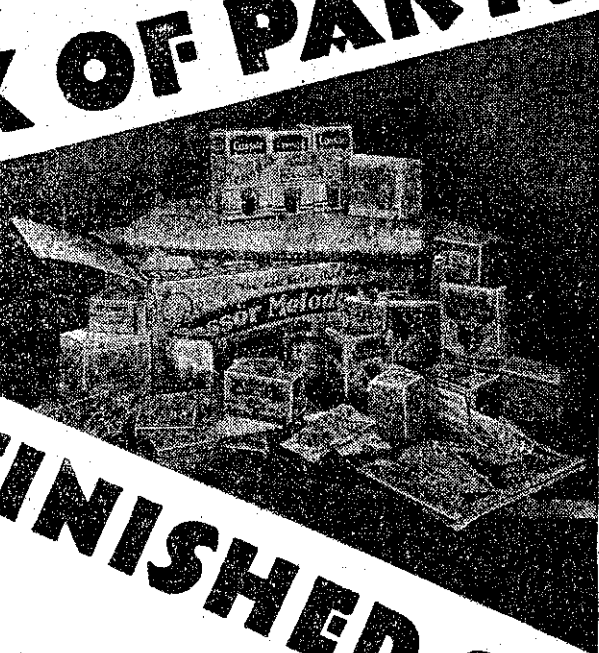
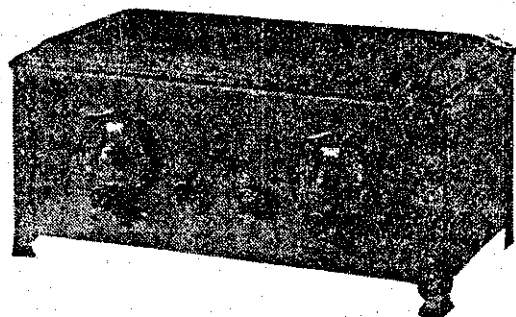
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Auckland Notes

(By "Listener.")

BAD luck dogged Auckland listeners at a most critical time last week. Up till the Thursday evening Australian stations had been coming in perfectly, and details of the search for the Southern Cross were eagerly received nightly. Then, with the bare news of the locating of the plane given by papers, listeners rushed to their sets on the Friday night, only to have to endure such a bombardment of static as has not been heard during a twelve-month. Volume of speech from Sydney was there, but to recognise it was impossible. An occasional phrase might be distinguished through the crashes, but that was all which got through at the 7 p.m. Sydney news session. Many hung on for a repetition at 10.30, but conditions then were even worse. So for once, the cable scored over the distant broadcast.

IN conveying the glad tidings, however, 1YA played its part. No sooner had the cable arrived than its contents were conveyed by the evening paper to the station, and immediately many thousands who hear the afternoon sessions knew that the Southern Cross was found. Again, it is pleasing to note, newspapers and broadcasters

co-operated for the public good. Mr. Cooper, of Devonport, was the first to secure further particulars, and these he sent along at once to 1YA. The station held on the air till after midnight in the hope of rendering further service to eager listeners, but nothing was audible. On the following afternoons and evenings, however, 1YA kept the province informed of all the available news, and was very little behind Australia with its information.

THE newly-formed Radio Society is not lacking in energy or enterprise. It is arranging for a concert in the Lewis Eady Hall, to which it will invite all interested in radio. From the hall the items rendered will be relayed to 1YA. This is practical help indeed.

LICENSES continue to flow in, and from what can be gleaned from those in the know, the totals, when published should cause both surprise and gratification. Certainly the dealers are feeling more satisfied than they were a few months ago, for orders are coming in freely.

NOW that relay stations are being given consideration, it would not be surprising to hear the Waikato district advance its claims for consideration when schemes are being drawn up. There are large numbers of listeners in the dairying districts, and though 1YA is received well through

most of the district, the establishment of a station relaying 1YA would give a great impetus to radio enthusiasm in the thickly populated district which lies round Hamilton. Perhaps Waikato residents will unite to show some of that enterprise which has borne such good fruit in New Plymouth.

THERE is quite an amount of keenness here over the forthcoming dinner-music programmes from 2YA. During the winter months 2YA is received in good volume in and around Auckland, even on the lower-powered sets, and as early as 6 p.m. Consequently there is likely to be trouble in many households. Father and mother will want 2YA's music, while the little folk will clamour for "Cinderella" and the children's hour.

NEXT Thursday's broadcast of Elgar's setting of "For the Fallen" is being keenly awaited. The chorus have been rehearsing at the studio, and are delighted with the encouragement and assistance given to them by Mr. Barnes and his staff.

DURING the re-licensing period a year ago, there were many complaints, both in print and vocally, regarding programmes. At the present juncture there are none. This in itself is a tribute to the advance which broadcasting has made here in twelve months, and also it is a fair surmise that the transmissions of the past twelve months have done much in improving musical appreciation of the listening public.

DX Club

Identified.

D. Jones (Pirinoa): The amateurs you heard were in all probability ZL 2GH Wanganui, and ZL 2BG, Hataitai, Wellington.

KNX Identified.

THE station "Listener," Waverley, heard was KNX. This station comes in at full speaker strength when conditions are good. This station has a power of 5000 watts, on 285.5 metres, and is owned by the "Los Angeles Express," operated from Paramount-Lasky Studios, Hollywood, California. The Yanks have been off with me for the last fortnight; static has been bad, and no new stations heard. Cheers.—S. Ellis.

After also giving details of KNX, "Antenna," Le Bon's Bay, adds: A letter verifying my reception of that station states that KNX is on the air from 6.45 in the morning till 1 a.m. My log now contains 258 stations which have been heard on 4 valves—Australia 21, New Zealand 17, South Seas 2, America 137, Dutch East Indies 1, India 3, Philippine Islands 2, Canada 5, Japan 10, and 60 on short waves.

REPLY TO CORRESPONDENT.

W.E.D., Picton: The Radio Broadcasting Company was in no way responsible for the alteration in the fees of dealers. Arguments so directed are, therefore, without point. As the matter was settled by the Post and Telegraph Department and is not now subject to review, we regret we are unable to afford further space for discussion thereof.

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See page 32 for column of casual advertisements.

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2YA Revue Company

IN the effort to provide the incessant demands for novelty and humour, the 2YA Revue Company made its first appearance on Saturday evening. Following on that performance we have received a letter signed "Moderation, Kelburn," taking exception to the standard of the performance given. This writer speaks in somewhat harsh terms of the performance, and says: "If the Broadcasting Company desires to please the majority of listeners it should continue to have the popular Saturday night programme with the Melody Four, etc., and not try these humorous programmes that make nobody laugh."

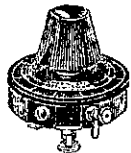
This letter is a good illustration of the difficulty of the programme organiser. Listeners will remember the practically incessant demand for novelty and variety in the programmes given, and accordingly, to meet that demand, effort has been made to discover and exploit talent capable of evolving into the desired standard. It has to be recognised that humorous novelties are most difficult performances to secure, and some little latitude must be given. We comment on the letter of our friend "Moderation" in order to emphasise the difficulty of the programme organisers. Personally, we also happened to hear the Saturday evening's programme, and would extend much more tolerance to the performance than our Kelburn correspondent. It was in our opinion quite creditable for an initial appearance. It has to be recognised that it takes all sorts to make a world, and we think many listeners will hold the view that the 2YA Revue Company showed promise of being able to evolve into a satisfactory combination and giving definite pleasure to many.



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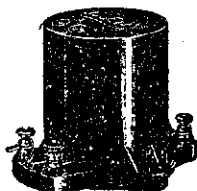
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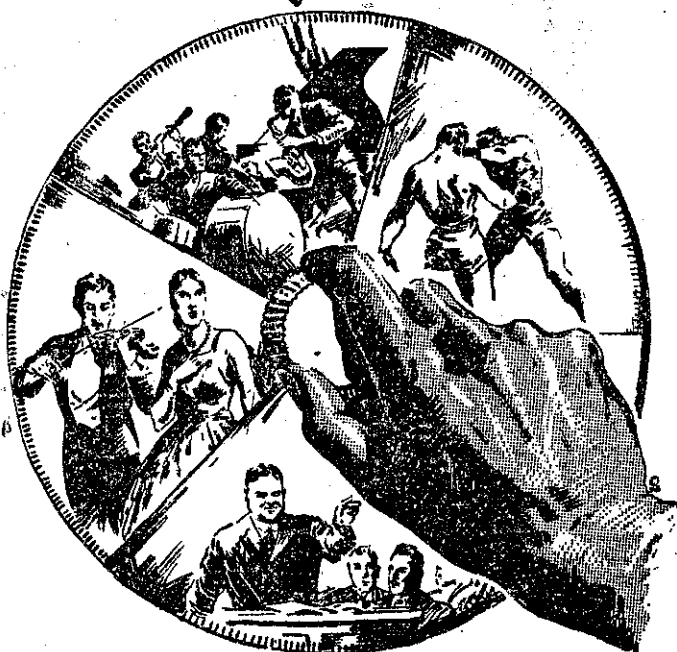
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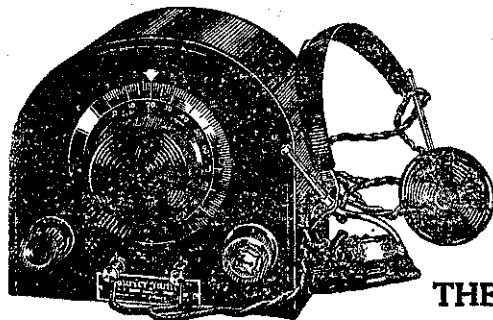


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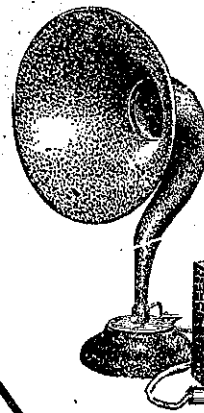
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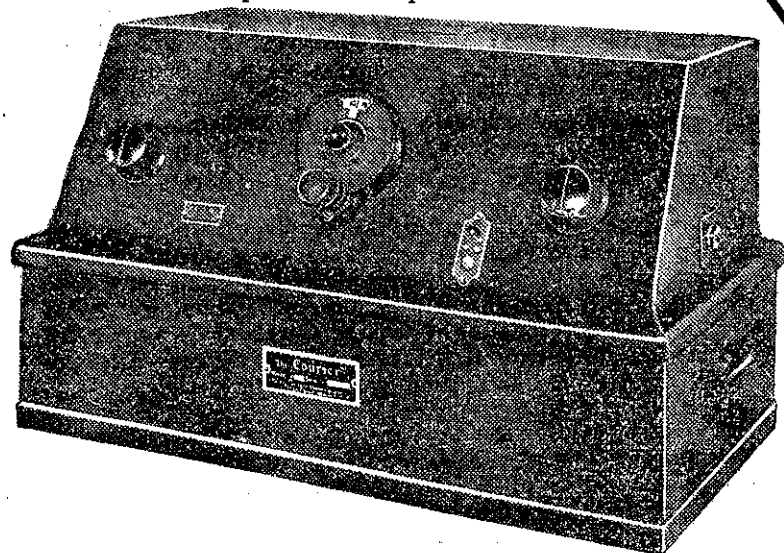
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N.Z. RADIO PUBLISHING CO., LTD.,
P.O. Box 1082, WELLINGTON.

WELLINGTON, FRIDAY, APRIL 26, 1929.

TO ENCOURAGE MUSIC.

WE make no apology for directing the attention of readers to the forthcoming initial performance of the Wellington Symphony Orchestra, as established on what is hoped will be a permanent basis. It is an organisation of which Wellington should have good cause to be proud. It represents the culmination of some six years' steady effort on the part of the founder, Mr. Leon de Mauny, and its prime objective is to make available to the Wellington musical public orchestral presentations of the world's masterpieces. With the desire to make good music as widely known as possible, the founder of the orchestra and his associates have agreed to their orchestral performances being broadcast. Listeners in general will, therefore, have the opportunity of enjoying and appreciating performances of a class which certainly otherwise would never be available to them.

WHILE, however, this privilege is to be accorded to listeners, we wish to make on this occasion a frank appeal to those who are able to do so to accord both their personal presence and financial support to the Symphony Orchestra. Effective and enjoyable as radio broadcasting may be, it can never hope to equal the pleasure afforded by physical presence at a performance of this nature. Massed in the orchestra are 64 instrumentalists, and for the concluding number of "1812" 76, thus giving the full orchestral presentation of the score as originally written by Tchaikowsky. The sight, sound, and atmosphere of such a performance can hardly be conveyed adequately by radio.

IT is important, of course, to music in Wellington that the new Symphony Orchestra shall be established on a sound financial basis. Annual subscriptions are, therefore, invited from those who are sympathetic, the basis being one guinea per annum, for which adequate tickets are available in return. Auckland is supporting her fine Bohemian Orchestra to the tune of 600 subscriptions per annum. Wellington should be able to equal that performance.

THAT radio and radio listeners should sympathetically encourage performances of this nature is, we think, admitted. Precedent is afforded by the action of the British Broadcasting Company in coming to the rescue of the famous Promenade Concerts in London by according them financial support and giving them the prestige of broadcasting. They have been so popularised that attendances, which were formerly declining, have expanded to the maximum

capacity of the hall in which they are given. It is sincerely to be hoped that a similar success will be recorded in Wellington on the occasion of the regular performances of the Wellington Symphony Orchestra. The Radio Broadcasting Company is doing its part in extending encouragement, but it may be that a number of country listeners, who are unable to attend in person, would like to show their appreciation of the establishment of the orchestra, and the pleasure they will derive by its work being put on the air, by becoming annual subscribers. The cause is certainly one which should greatly appeal to all lovers of music, and we commend the object to those who are able to extend their support. They will benefit by the improvement and diversity of programme which will be afforded by these features from time to time.

A Unique Coincidence

History of a Lost Medal

PROBABLY the most unique coincidence in the radio history of New Zealand occurred last Friday night, when Mr. J. H. Owen was delivering from 2YA an address on his experiences abroad.

During the course of this lecture, Mr. Owen said, "Whilst walking in St. William White Park, in Winnipeg, a strange thing happened. My wife picked up a Great War Victory Medal engraved 74/786—Pte. G. L. Gregory, N.Z.E.F. The medal was handed to a park constable and in due course a letter reached me from the Defence Office at Ottawa, saying that the medal had been forwarded to the Defence Department, New Zealand, for safe keeping in the hope that it would reach the owner or his family."

Whilst Mr. Owen was still at the microphone an officer of the Defence Department communicated with the studio saying that the lecturer would be pleased to learn that the medal had reached the Base Records, Wellington, and had since been forwarded to the soldier to whom it belonged. The announcement was placed in Mr. Owen's hands, his talk was interrupted, and the pleasing information was broadcast.

Municipal Elections Dinner Music Session

Broadcasting the Results To Commence on Monday

THERE will be much interest throughout New Zealand on Wednesday, May 1, the date of the municipal elections. Polling results will be covered by the four stations and listeners in are assured of another interesting evening.

2YA, which usually observes Wednesday as a silent day, will be on the air that evening.

Not only results, but speeches by the various candidates will be broadcast, so that as far as possible listeners will be given all the news and incidents of the evening. Arrangements are in hand for the receipt of outside results.

THE revised time-table of 2YA will come into effect on Monday, April 29, when the week-day Children's Session will commence at 5 o'clock and there will be dinner music between 6 and 7 p.m.

In our published programmes will be found the detailed items for the dinner sessions. It will be noticed that each session will be divided into sections, each one commencing at a set time, namely, 6, 6.15, 6.30, and 6.45, and that there will be a tacet before the opening of each section. There will be no announcement to the items.

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Wellington Symphony Orchestra on May 2

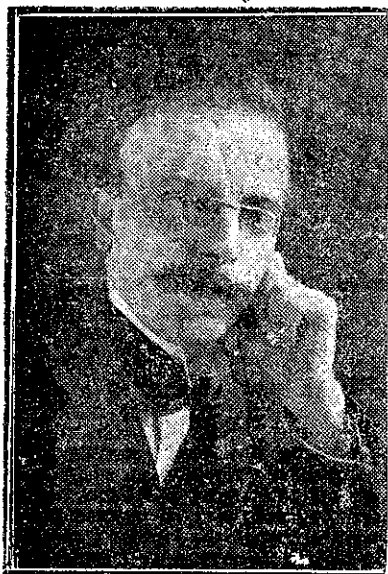
Outstanding Performance by Full Orchestra in Town Hall—Treat for Listeners

WELLINGTON'S excellent musical organisation, the Wellington Symphony Orchestra, under the baton of Mr. Leon de Mauny, goes on the air for the first time this year on Thursday, May 2, with an excellent Tschai-kowsky programme of music. It will be a musical treat.

Listeners will have pleasant recollection of the first concert broadcast by this orchestra, last year, and it will afford them great pleasure to learn that arrangements have been made whereby all the concerts of the 1929 season by this talented combination will be broadcast by 2YA.

THE first of the season, the "Tschai-kowsky" programme, which will be relayed from the Town Hall, will comprise the following:—"Capriccio Italienne," the famous "Symphony in B-Minor No. 6" (Pathétique); a 'cello solo by Mr. Claude Tanner. "Variations on a Roccoco Theme" (the accompaniste being Madame de Mauny); the popular "Nutteracker Suite," and last, but not least, the famous "1812 Overture."

TSCHAIKOWSKY'S Sixth Symphony, called by him "The Pathetic," has become the most popular of his large orchestral works. It was its composer's favourite, but he hardly anticipated for it the general approval it has received. Whilst still engaged in its composition (1893) he wrote to his nephew: "To me it will seem quite natural, and not in the least astonishing if this symphony meets with abuse or scant appreciation at first. I certainly regard it as quite the best and especially the 'most sincere' of all my works. I love it as I have never loved one of my musical offspring before."



MR. LEON DE MAUNY.
Founder of the Wellington Symphony Orchestra.

WHAT is known as the "Nutteracker Suite" is the music from a Russian ballet, "The Nutteracker and the Mouse King," telling of the wonderful adventures of a little girl, and of a beautiful pair of nutterackers which she received as a Christmas present. There is a miniature overture, and then a set of six short pieces—"Characteristic Dances," Tschai-kowsky calls them, and the title is very apt. They are all vivid, and some are amusing. The Suite, when played as a whole, is rounded off by the "Valse of the Flowers." The concert is timed to commence at 8.15 p.m., on May 2, and between 8 o'clock and 8.15 on May 2, a brief recital of Tschai-kowsky's songs will be broadcast.

WITH the definite establishment of the Wellington Symphony Orchestra and the initiation of its first season, it is interesting to recall that its growth and development has been due to the continued enthusiasm of its founder, Mr. de Mauny, and his steady work throughout the past six years.

Mr. de Mauny was for some 15 years a performer in the famous London Symphony Orchestra, in which he had thoroughly comprehensive experi-

ence and training. Mr. de Mauny came to Wellington from London six years ago, and commenced the practice of his profession. From the pupils then secured he has steadily built up that full body of well-trained string performers which is the backbone of any good orchestra. From year to year the number of players available has steadily expanded, until last year Mr. de Mauny felt that the time was ripe with the material available for the launching of a more ambitious effort. There was then staged the memorable Symphony Orchestral Concert in the Town Hall, which was relayed by 2YA, and was accorded the highest possible praise, not only by all who had the privilege of being present, but by listeners who enjoyed it through radio.

ENCOURAGED by the success attending that effort and the expression of views by scores of interested people that so fine an organisation should not be allowed to lapse, steps were taken to place the orchestra upon what is hoped will be a permanent footing.

A campaign is in progress for annual subscribers. Auckland supports their Bohemian Orchestra to the tune of some 600 annual subscribers. Wellington, as the capital city, should be able to equal that performance. Sound financial support is essential to maintain the organisation, because the principle at stake is that all professional talent employed should receive an adequate fee for the performance, participation in which involves attendance at four rehearsals.

Listeners in town are urged wherever possible to personally attend the orchestral concert. No matter how fine the radio presentation is, it cannot equal actual presence at a performance of this nature, where there are no fewer than 64 instrumentalists in the orchestra.

Incidentally, it may be mentioned that for the final item that will be played, Tschai-kowsky's "1812 Overture," the orchestra will be strengthened by the addition of twelve brass instruments, thus retaining the original score as written by the famous composer. Never before in New Zealand has this famous number been performed by the full orchestra as required in the original score.

In view of the arrangements made to permit of the broadcast of the performances by the Symphony Orchestra, thus carrying the enjoyment to country listeners, it is hoped that a certain number of country folk, who are in a position to do so, will become subscribers to the funds of the Wellington Symphony Orchestra.

The guinea subscription should be sent to the Secretary, P.O. Box 168, Te Aro, Wellington. It is also hoped that the opportunity will be taken by those performances to inculcate a love of music in the larger schools of the city.

Cheap Autumn Vacation Trips by Rail ere Winter Comes.

Now is the time for parents, teachers, and scholars, aunts and uncles and cousins—not forgetting country cousins—to plan a health-giving Autumn Holiday trip.

The Railway offers reduced fares for everybody to any station from Thursday, May 9, to Saturday, May 18—available for return until Saturday, June 15, 1929.

Book Early to Ensure Accommodation.

Tickets are obtainable at any Railway Station or Central Booking Office 14 days ahead of travel date.

RADIO LISTENERS' GUIDE—1929-30

The New Edition of the Guide is not a revision of the 1928-29 Edition. It has been entirely rewritten and brought up to date. Special features are:—

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The Southern Cross

Was "SOS." Heard?

Analysis of Messages

AMIDST the general joy at the rescue of the missing Southern Cross aviators, we have not so far seen any examination of the authenticity or otherwise of the message reported to have been picked up by a Melbourne enthusiast as possibly from the Southern Cross. With the publication of Ulm's diary, and its record of the thoughts and movements of the men, we have taken the trouble to check up on the dates, with a view to ascertaining whether or not the message reported by the Heidelberg enthusiast was genuine. It would seem on the facts of time as revealed by this examination that no such message was sent from the Southern Cross on the day in question. It will be interesting later, when opportunity possibly permits, for a fuller examination of Ulm's diary, to investigate the matter further. Meantime, for the benefit of listeners the position may be summarised as follows:—

On April 4 a cable message was dispatched from Melbourne reading as follows:

"An experienced wireless enthusiast named V. George, of Heidelberg, thinks he has picked up a message from the airmen. He was listening on 34 to 35 metres wavelength at 9.15 last night when, amidst statics, what appeared to be a mutilated message came through, reading: 'Smith will try again in

morning.' Indecipherable words followed, then: 'Peller turn. Men eating wild fowl.' The message then faded badly. Mr. George thinks it came from someone with very little power, using an ordinary receiving valve as a transmitter.

With the discovery of the Southern Cross the record of each day's events kept by Lieutenant Ulm became available. From this record the following extracts are made, which show that no messages were sent until the evening of Sunday, April 7:—

"Saturday, April 6.—This was our worst day. A plane passed within 4 miles of us. This was after we had nearly killed ourselves marching up the hill keeping the fire alight. Just after we returned from Darlington Hill and had lit the Coffee Royal fire, Smithy heard a plane. All worked furiously stoking up a big smoke fire. He passed us not more than five miles away at 2.50 p.m. This decided us to have a tree down to jack up a wheel (to work the radio generator). Smith and I worked without rest for two hours, while Litch kept the flies off, and we won. We got the tree down, but it knocked us up that a plane had passed. It was terribly disappointing, and we cursed the pilot.

"Sunday, April 7.—We got the wheel jacked up by noon. This has been Smithy's big day. He excelled himself. He never stopped working, making a friction wheel on which to run the generator and finished it with a penknife only, in the blazing sun, tormented by flies. Then Smithy rigged an engine starter handle in the outer end of the axle, making wooden bearings with a knife. We took off the generator. Mac spent an hour wiring it up. Smithy mounted his little wooden drive on the generator, and we had a practice run. Mac was in the

cabin at the set, Smithy and Litch turning the 44-inch wheel, and myself holding the generator on the wheel, making the friction drive. We generated nearly one half an amp. There were loud cheers from Old Mac. He says that we can transmit, but the trouble is we can't keep it running more than ten seconds at a time, so we worked hours to-night winding the wheel, while Mac sent SOS and other signals. Our best hope is that someone picked up and reported to La Perouse, which we receive excellently here.

April 8.—... Last night Mac heard all the stations again; but there was no news for us. Smithy is knocked out, but most of our heavy work is done, and we are resting from the more strength-sucking efforts of turning the generator. Each turns for ten to fifteen seconds, then all rest for a quarter of an hour. The tobacco ran out to-day. We tried to smoke leaves. They were awful.

On the foregoing summary it would seem that the Heidelberg report, although doubtless given in good faith, did not emanate from the Southern Cross.

"A Ramble Round the World"

Interesting Address to be Broadcast

FRIDAY next, at about 9 p.m., the scheduled programme from 2YA will be interrupted and Mr. W. H. Owen, who has just returned from an extensive trip abroad, will continue his interesting narrative. This concluding talk will be centred round "Broadcasting in the Mother Country." The British Broadcasting Corporation, which controls radio in Britain, is taken as the world's standard, and it will be interesting to hear of the personal observations of one who is vitally interested in radio.

A Deaf Mute Hears

3YA Reports Strange Case

INSTANCES have previously been recorded of the great blessing which a radio receiving set is to elderly people who are afflicted with deafness, but the crowning instance, in which a deaf mute is concerned, is reported from 3YA.

Among the visitors to that station recently was a man and his daughter, a girl of 11 or 12 years of age, who had been deaf and dumb from birth. The operator at 3YA was listening in to Wellington and on the suggestion of 3YA Station Manager the ear phones were put on the head of the girl. She listened intently and for the first time in her life heard something through her ears. She had heard music.

IT is reported that M. Citroen, the manufacturer of the well-known French motor-car, is intending to launch out into the radio trade with a cheap mass-produced set.

Miss Edith Harry

South Island Dates Changed

MISS Edith Harry was not able to keep her engagement at 3YA on April 24. She was unavoidably detained in Wellington, and new dates have had to be allotted to her for 3YA and 4YA. The dates of her radio appearances in the South Island will therefore be: 3YA, Wednesday, May 1; 3YA, Wednesday, May 8; 4YA, Friday, May 17; 4YA, Tuesday, May 21.

Children's Session at 4YA

Big Brother Bill to Control

WITH the extension of hours at 4YA, there has been a complete recasting of the time-table. An important departure to be made will be extra children's sessions. Up to now there have been sessions on Tuesday, Friday and Sunday, but from the beginning of May, sessions on Mondays, Wednesdays and Saturdays will be regular features on the programme.

And who is to be in charge? Why, Big Brother Bill. In being able to secure the services of Big Brother Bill as organiser, the Broadcasting Company has been distinctly fortunate. He is an outstanding success as an entertainer of children, whether by voice or by pen.

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6	80	5 5 0
6	100	6 5 0

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Auckland's Band**Caustic Press Comment**

THE Auckland "Pictorial News," which takes a keen interest in culture matters, has the following comment to make upon the attitude of the City Council to the radio broadcasting of band recitals:—

"The Auckland City Council has had showered upon it probably more abuse and caustic criticism than any other local body in the Dominion during its present tenure of office. It certainly has earned a generous share of the kicks that have come its way as an admonition for ineptitude, extravagance and lack of administrative ability; but surely one of its most futile efforts to serve the citizens of Auckland has been the attitude adopted in dealing with municipal music.

"Squander-mania.—The Auckland City Council has squandered money most recklessly in this connection, and has decided to perpetuate the ridiculous anomaly of paying extravagantly for something the public manifestly does not want. The council has, for instance, acquiesced in continuing to pay a city organist £600 per annum, in addition to £200 a year for a tuner. These certainly are useful little "perks" for the individuals receiving them, but unfortunately those fees do not represent nearly the cost the ratepayers are paying for municipal music. The expenditure on lighting, advertising, rent, and engaging artists to assist at concerts (to mention but a few outlays) brings the annual cost of this musical farce up to about £1400, or nearly £70 for each concert. The gross receipts, we are informed, amount only to £4 8s. 6d. per performance!

"Organ Grinding Unpopular.—Auckland may, or may not, be a music-loving community, and its people may deserve being reproached for not possessing an artistic soul or an appetite for organ recitals. One thing, however, citizens have most certainly shown that they do not want municipal concerts, such as have been provided for them during recent years. We are told several of the once-thriving musical and choral societies in the city are having a particularly lean time, and find difficulty in keeping together, although Aucklanders have shown a disposition to enjoy the class of music these organisations used to provide. Now, unfortunately, they are unable to finance concerts, because of the high cost of producing them, despite the fact that most performers offered their talents gratuitously and gave their services generously.

"Better Use for Money.—It would certainly seem that the Auckland City Council would have been better advised to subsidise our languishing choral societies than continue to individuals when citizens have, in no uncertain way, demonstrated they do not appreciate their fare. Perhaps 'organ music' is above the musical understanding of the average citizen, but as ratepayers are paying the piper there should be some effort on the part of councillors to give the public what they want, rather than try and force upon them something they do not want."

Aunt Jean at 1YA

QUITE a little gift for versifying is possessed by Aunt Jean of 1YA, and every opportunity is taken to incorporate the news of the day in a topical verse which is sung to the children to a melodious air. The finding of the Southern Cross was one such occasion and produced the following verses from "Aunt Jean." In response to several requests from listeners we republish them here.

Good evening, Radio Family,
We've got good news to tell;
The "Southern Cross" is really found,
The flyers safe and well.
Now, isn't it just wonderful
The search was not in vain?
I'm sure we wish them better luck
Whenever they try again.
Well, listen in, listen in,
Yes, listen night and day;
You'll hear the best of everything
From Station 1YA.

Wellington Amateur Radio Society.

THE annual general meeting of this society will be held on May 27, not as announced previously. Remember, keep this date free, and make the meeting a real success. Announcement of details will be published later. Watch for them.

Talk to Africa

WHAT is probably a record achievement in wireless (Morse) transmission was accomplished by Mr. Roy Clarke, Lyall Bay, who is a well-known amateur using the call sign 2AW. Thursday, April 18, between 5.30 a.m. and 6.30 a.m. Mr. Clarke established two-way communication (on 40 metres) with three African stations as follows:—

ZSA4L (Johannesburg).
ZSA3E (Durban).
ZSA9W (Bloemfontein).

Difficulty was experienced in the past receiving African signals, and similarly Africans were unable to hear New Zealand signals, owing, it was thought, to the supposed "heavy-side-layer" theory. This is the first occasion Mr. Clarke has succeeded in connecting with Africa; and Mr. Clarke believes Mr. Frank Bell on one occasion was able to establish communication with an African amateur transmitter.

Australian Figures

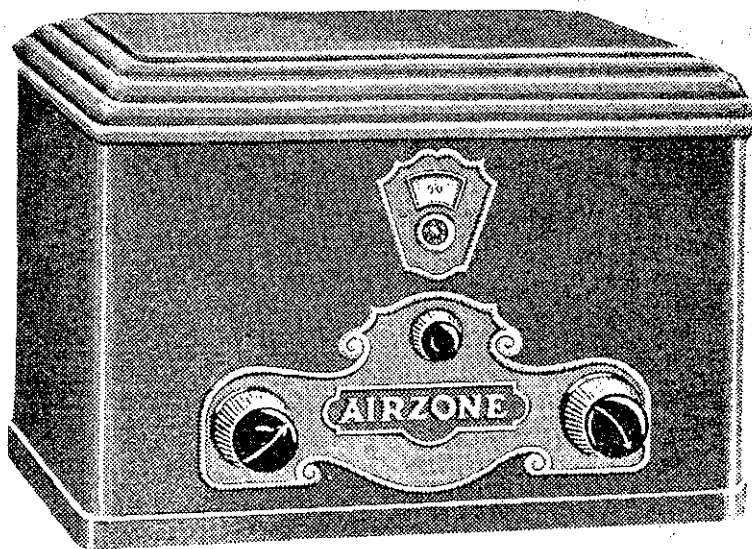
Following is the latest table of Australian listeners:—

	Receiving licenses in force at 31/3/29.	Ratio to 100 of population.
New South Wales	95,487	3.92
Victoria	141,932	8.09
Queensland	24,642	2.67
South Australia	22,942	3.97
Western Australia	3,790	.94
Tasmania	4,327	2.05
Commonwealth	293,120	4.64

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3LO Rebroadcast

Prompt News of Leckie's Victory

LISTENERS to 2YA of Saturday evening's concert session were pleased to hear the announcement that, provided conditions were satisfactory, an attempt would be made late that evening to rebroadcast the ringside description to be given by 3LO, Melbourne, of the match between Johnny Leckie of New Zealand and S. Wilson of U.S.A. Following on Leckie's victory over W. Grime, the triple Australian champion, intense interest was evoked in Leckie's bout with Wilson at Melbourne, although the general expectation was that victory would come his way.

In the hope of hearing the thrilling first-hand report of the contest, a great number of 2YA listeners undertook the late session necessary to hear 2YA's reproduction. Fortunately for

all concerned, the enterprise was rewarded by satisfactory atmospheric conditions. The Melbourne station was picked up clearly, static being almost entirely absent, and the rebroadcast so successful as to almost invite comparison with a typical relay of boxing from the local Town Hall. Round by round the combat was followed with intense interest right till the cheers of the audience at the conclusion of the fight, in which, of course, Leckie was victorious by a substantial margin of points. The rebroadcast of 3LO was given by courtesy of that station.

A Clever Young Performer

THE 3YA Children's Session organiser is very proud of one of the young artists who frequently performs for her. He is Gordon Anderson. He has just gained the Gold Medal of the Royal Academy for being the best New Zealand player in the Intermediate Grade of the pianoforte examinations.

2YB New Plymouth

Official Opening on April 27

Good Initial Programme Arranged

THE official opening of the new broadcasting station in New Plymouth, 2YB, will take place on the evening of Saturday, April 27.

The timetable mapped out by the North Taranaki Radio Society provides for broadcasts on three nights of the week—Mondays, Wednesdays and Sundays. There will be a sporting relay on Saturday afternoons when opportunity offers, and an early session on Saturday evenings, when the sporting results of the day will be broadcast.

An excellent programme has been arranged for the opening function, which will take place in the studio, in Messrs. H. Collier and Co.'s building.

THE Broadcasting Company will be represented by Mr. J. Ball, Editor-Announcer, who will officiate at the microphone. Mr. J. M. Bingham (Chief Engineer), and Mr. W. Huggins (Assistant Engineer), who assembled the plant in Christchurch and installed it at New Plymouth, will also be present.

The official speeches, which will be limited to five minutes each, will be made during the evening. As will be seen from the programme, talent is coming from as far afield as Hawera.

THE PROGRAMME

Official Accompanist.....Mr. Harold Morey.
Announcer.....Mr. John Ball
Station Director.....Mr. Ed. Payne

8 p.m.

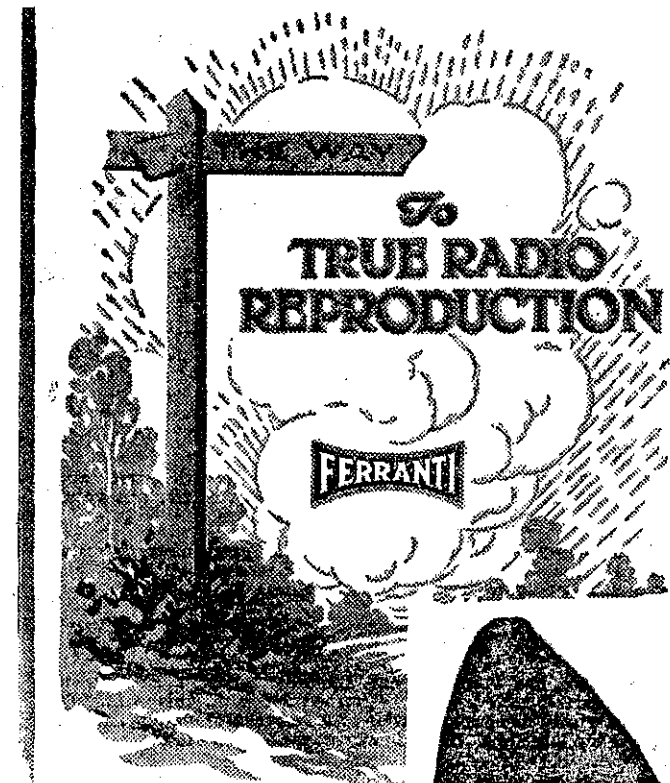
1. Overture—Selected, Hawera Savage Club's Orchestra.
2. Soprano Solo—Mrs. Veta Cornwall, "Romany Life," (Victor Albert).
3. Instrumental Duet—Messrs. L. Bosworth and R. George. Selected.
4. Tenor Solos—Mr. Chas. Blake, (a) "Roadways," (b) "Two Tramps" (Lohr).
5. Male Quartet—The Melody Four, "Gone Are the Days" (Hall).
6. Humorous Recital—Mrs. Nelson Hill, "A Servant Girl" (Wish-Wynne).
7. Bass Solo—Mr. J. B. Macpherson, "The Garden of Allah" (Chas. Marshall).
8. Pianoforte Duet—Misses M. T. and E. Crawshaw, "Prelude" (Rachmaninoff).
9. Orchestral Selection—Hawera Savage Club's Orchestra.
10. Violin Solos—Miss Evelyn Dowling, (a) "Hornpipe A. L. Tuglese" (Barrett), (b) "The Admiral's Story" (Marsden).
11. Contralto Solo—Mrs. Walter B. Shipton, "My Ships" (Augustus Barrett).
12. (a) Humour—Mrs. W. Birch-Johnston, "Waiting for Something to 'appen" (G. Ellis); (b) Whistling Solo—Mrs. Birch-Johnston, "Rosebuds" (L'Ardite).
13. Instrumental Trio—Misses V. Ross and M. Coleman, and Mr. J. Dobson, "Trio Op. 159 No. 2 in E Minor" (Carl Reinecke).
14. Vocal Duet—Mr. and Mrs. Ashley Macdonald, "A Summer Night" (Thomas).
15. Tenor Solo—Mr. Jack Quinn, "On With the Motley" (from "I Pagliacci," by Leoncavallo).
16. Recital—Mrs. Frank Kircher, "Rosa Mia" (Longstaff).
17. Male Quartet—The Melody Four, (a) "The Quest" (Newman); (b) "Simple Simon" (Hall).
18. Orchestral Selection—Hawera Savage Club's Orchestra.
God Save the King.

Personnel of Orchestra:

Conductor.....Mr. F. H. Ollernshaw
Pianist and Musical Director.....Mr. Jack Renwick
Violins.....Professor J. Higham, Messrs. D. L. Overbye, D. W. Hostick, J. Malone and C. Johnson.
Viola.....Mr. J. Malone, Senior.
Clarionettes.....Messrs. W. Snowsill, Keith Ward and J. Tosswill.
Oboe.....Mr. W. Barleyman
Cornet.....Mr. R. Swan
Trombone.....Mr. J. Crowder
Cello.....Mr. H. N. Lester
Bass.....Mr. G. Mossman
Bassoon.....Mr. A. Foden
Drums.....Mr. H. L. Robinson

Personnel of Male Quartet, "The Melody Four":

Messrs. F. Hooker, W. Okey, B. Bellringer and A. Macdonald.



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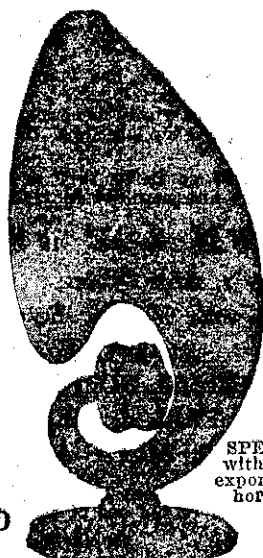
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SPEAKER
with the
exponential
horn.

FOLLOWING are the notes of a lecture to be given from 4YA on Tuesday, April 30, at 7.30 p.m., by Mr. Lloyd Ross, M.A., LL.B., under the auspices of the Workers' Educational Association, University of Otago.

A man commits suicide. Is that a tragedy? A man is killed in battle, a woman dies, a sparrow falls? Of course, to those who suffer these things would be tragic, but would they make a play? We want more—we want the background of events leading up to the tragic events; we want to know more about the characters themselves; we probably want to feel that the particular tragedy has some relation to the problems of life for us all. Tragedy reveals how men are led into suffering by their natures, or by the laws of the universe, by the circumstances in which we live. A tragedy in drama should include a conflict, the protagonists in themselves should be great, the tragedy itself should be inevitable, given the characters as they are and the circumstances in which they are placed. We will take one by one the ingredients of a tragedy and see how they have altered.

The Characters.

IN a Greek play the characters were the great of the earth, gods and demigods. Oedipus was such a man. Elizabethan plays were about kings and lords—Othello is noble, commanding, a born leader; Macbeth at first is a courageous and inspiring general, vic-

torious in battle. To-day the people who suffer can be the ordinary people of the streets. See, for instance, "Justice," by Galsworthy. We want to see people like ourselves. A recent critic has written "Ruin of the simplest people can have tragic impressiveness if it means the waste of fine or admirable characters, no matter how humble the sphere in which they are employed. . . . But the ruin of a weak man with no high qualities to set off his weaknesses we are not accustomed to call tragic." "Justice" would hardly fit their definition, because Valder, the victim, is weak, petty, and without any heroic qualities. It may be, however, that Galsworthy in this play is the forerunner of the very modern tragic writers who try to represent the clash of social forces, and not of individuals. In some of these plays the characters are designated by such terms as "He," "She," "Mr. Zero," "The Mass," "The People."

The Conflict.

THE Greeks put on the stage great figures, going to waste, partly because of their own pride, partly because of Fate or circumstances. The misfortunes of absolutely righteous characters were too shocking for the tragic stage. Othello is capable of headlong violence almost amounting to madness when provoked. Macbeth is unscrupulously ambitious. Tragedy had to be impressive and awe-inspiring; therefore the figures had to be great. The world was just, therefore the flawless could not suffer. Here, too, there is a change to-day. We represent not merely the conflict of man and fate, but the conflict of man in a society which is not perfect, the sufferings of people through no fault of their own. In Galsworthy's "Escape" a man is imprisoned because he is chivalrous. He escapes, and the play deals with his wanderings, but he gives himself up to save a priest from telling a lie. However, although there have been these changes to an interpretation of life more akin to our everyday experience, we have preserved the ideal that tragedy must awaken passion mixed with the thought that we, too, are likely to meet tragedy. Until recently, emphasis would be placed on our fallibility as human beings. To-day the tragic writer merely insists we may be caught by external events, no matter how pure or right we may be. The tragedy may be not so much the disaster of an individual as the failure of an ideal, as in "Saint Joan."

The Subjects.

IN "Agamemnon," by the Greek Aeschylus, a King of Greece is killed by his wife because he had sacrificed his daughter for the success of an expedition. That is a typical Greek subject—the doings, terrible doings, of the great. In a Shakespearean tragedy the poor never suffer. To-day all subjects, past and present, are fit for a tragedy. "Twenty Below," by Nicholls and Tully, deals with the actions of some American hoboes who have sought refuge from the cold in a prison. "The Hairy Ape," by O'Neill, deals with an ignorant, dirty, foul-

Education by Wireless

What is a Tragedy?

mouthed stoker in an American liner. On the other hand, the plays of O. K. Munro try to put on the stage the problems of international politics, of warring nations, of revolution and counter-revolution.

The Action.

ALTHOUGH the Greeks dealt with tremendous subjects, the incidents were relegated to a messenger's speech. They were too horrible to show. The Elizabethans delighted in scenes of murder and torture. We want action on the stage, but some things are too terrible even for us. This may explain why "King Lear" is seldom played.

The problem of a tragedy is to express the universal in the particular. We want to feel that more is involved than is apparent on the surface. The nature of life itself is the real theme. "As flies to wanton boys, are we to the gods. They kill us for their sport," or "The gods are just, and of our present vices make instruments to torture us." Which is true? Different dramatists have different answers, but a great tragedy contains a view of what life is. The feeling of universality is gained by

the use of the supernatural, by symbolism, by a sub-plot commenting on the main plot, and by the significance of the hero. The finger of doom points to us all.

Discussion.

READ a Greek, an Elizabethan, and a modern tragedy, and trace out the changes in the ingredients of a tragedy. Aristotle defined a tragedy—"Tragedy is a representation of an action, which is serious, complete in itself, and of a certain limited length; it is expressed in speech made beautiful in different ways in different parts of the play; it is acted, not merely recited, and by exciting pity and fear it gives a healthy outlet to such emotions." How far does this definition apply to modern plays? (2) A man crosses the road and is killed. Sketch out how this incident might be treated by a Greek, an Elizabethan, and a modern to make a tragedy; (3) Interpret by the changes in the ages from Greece to 1929. Books: "Tragedy," C. P. Lucas; "Introduction to Dramatic Theory," A. Nicoll; "Dramatic Values," C. E. Montague; "Euripides and His Age," Gilbert Murray; "Modern Drama," Otago W.E.A. correspondence course.

All information, suggestions, criticisms, answers to "Radio Lecturer," Secretary, W.E.A., Otago University, Dunedin.

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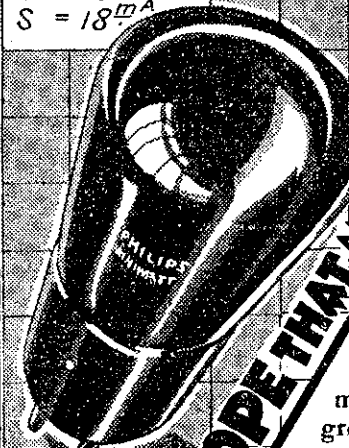
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In Brief.

"G.P." (Oamaru).—Before we can answer your questions, we would need to see a diagram of the circuit.

Defective Power Unit.

"J.S.C." (Nelson) writes: "I built the 2-R.F. Browning Drake, but it was not altogether successful. I had difficulty in neutralising it to my satisfaction, so I changed it, making the following alterations: The aerial coil comprises 58 turns tapped at the 18th from the ground end. The radio frequency transformers, primary 32 turns centre tapped, 30 gauge D.S.C., and the secondary 85 turns of 22 wire on a 3-inch former. The plates of the radio frequency valves are connected to the top end of the primaries, the neutralising condensers to the bottom, and the centre tap to the "B+." R.F. Between "A—" each of the detector and the first audio valve and the "B's" of the first and second transformer respectively I have connected a 2 mfd. condenser. In the final stage I have incorporated push-pull.

"I am now getting excellent results, especially regarding tone, selectivity, volume, and distance, but I am getting an excessive milliampere drain. As I place the valves in their sockets, I notice that the first valve draws 14 milliamps. The two or three following make little or no difference, the meter reading 14 until I come to the two power valves in push-pull. These four valves are all connected to the same tap of my eliminator.

A.: The particular eliminator supplies taps for "B—," "B+22½," "B+45," "B+90," and "B+135." Between "B135" and "B—" is a resistance, and the tapplings for the other valves are taken off along this resistance, so that it would appear that towards the negative end of this a break has occurred, and full power cannot be supplied. The first valve should read 5 milliamps. only but as it draws 14, the following valves are not getting their share. The correspondent's best plan would be to take his eliminator to a radiotician and have it tested. Failing this, the set would need to be overhauled by an expert.

A Case of Overloading.

WHAT appears to be a case of overloading the last valve has occurred to

Questions and Answers

"J.L.S." (Waihi). He has a five-valve neutrodyne, and is using five 201A valves, with 4½ volts bias on the last valve. When handling volume, the set distorts. He has recently brought the anode voltage to 135, adding 9 volts grid bias. This arrangement, he adds, has made a wonderful im-

provement in tone, and now great volume is handled without distortion. We are asked if this would be as effective as a 112 valve. The 90-volt connections and the 4½-volt grid bias is common to both audio valves. Is this satisfactory, or should the first valve have less grid bias? What change should be made in circuit connections to bias the second last valve?

ter than the 112, while this would be an improvement on the 201A for the last stage.

The second last valve could be a 201A and bias should be added in the following manner: On examining the set it will be seen that the G.B. negative goes to the

CORRESPONDENTS are requested to observe carefully the following points. Failure to observe these may mean delay in answering and even the loss of the communication.

1. Addresses.—All technical correspondence, whether inviting reply or not, must be addressed: "The Technical Editor," "N.Z. Radio Record," Box 1032, Wellington.

2. Each letter to bear (inside) the department to which it refers:—Construction, Crystal Corner, Questions and Answers, or General.

3. Letters inviting reply must be accompanied by a stamped and addressed envelope, but the right to answer any letter through the columns is reserved. Correspondents should watch the columns carefully as one letter may be answered in more than one section.

4. Advice requiring discrimination between factory-made sets or between makes of components cannot be given.

5. All letters to be signed, but a nom-de-plume may be added.

6. Reports for the DX Club to be addressed: "DX," Box 1032, Wellington.

A.: No doubt increasing the anode voltage and applying correspondingly greater grid bias to the last valve would improve tone, but if the correspondent were to use say a 171 with from 20 to 30 volts bias, he would see the remarkable difference in tone. A 5-valve set will take such a power valve quite easily, and it would be bet-

audio transformers. Disconnect the lead to the second last valve and take it to —4½; connect the positive to the C. positive on the binding post.

What increase of plate current will there be with 135 volts and 9 volt G.B. over the 90 volt and 4½ volt?

A.: The difference will be almost negligible.

Will I need an output filter with 135 volts and 9 volts G.B.?

A.: It is not essential, though it would improve tonal quality.

I have a 1-valve reflex which I believe is radiating, for reaction acts very fiercely.

A.: Reduce the number of turns on the tickler, and when there are no stations broadcasting, try advancing the reaction until the set oscillates. A plot will indicate this. Find the oscillation point for different parts of the dial, and make a note of these, so that when listening in there is no need to make the set oscillate and cause a howl.

Details For a Charger.

"RECTIFIER" (Eltham), in asking for details for an "A" and "B" charger also makes the following inquiries:—

1. Would a 201A valve be as good a rectifier as the chemical rectifier, viz., aluminium and lead?

A.: It would have a smaller percentage of efficiency, but chemical rectifiers are not as satisfactory as valve rectification, though they are considerably cheaper. The 201A valve is not suitable where any amount of current is to be handled.

2. What current in amperes would the 201A pass?

A.: Approximately .01 amperes.

3. Could it be used in an A and B charger?—No.

Several requests have come in for an A and B battery charger, so "Pentode" will describe one in a future issue. Valve rectification will be employed.

Applying the Screen Grid.

IN sending us his subscription for the new Listeners' Guide, "H.A." (Waiuku) writes: I have made up the short-wave receiver described in your paper, but as it was not a great success, I changed it into an all-wave receiver, and am getting splendid results, both for tone and quality. I am now looking forward to making it a whole-world all-wave model. Could you supply particulars of such a set?

A.: Yes. As many correspondents have been asking for details of such a receiver, "Pentode" has agreed to describe one—the "Wonder All-Wave" receiver, comprising screen grid, detector, and audio, which may be a pentode.

Could a screen grid valve be substituted for one of the radio valves in the shielded-5 Neutrodyne. If so, what alterations would be necessary?

A.: Yes. The screen grid could be quite well applied to the "shielded-5," the alterations necessary being described in a previous issue of the "Radio Record." The screen grid would have to go in the first stage. The last word in the application of screen grid to the broadcast receiver has been incorporated in the "Adapted S.G. Browning-Drake," described in the Radio Listeners' Guide.

Sizes of Coils.

"R.G." (Denniston) wants to know the tuning range of his shortwave coils, but he has not given us sufficient data. We can work out the range of any coils provided the following details are provided: The size of wire, its covering, the size of former, the distance between the first and last turn on the secondary coil, and the tuning condenser which operates with the coil.

Concerning Accumulators.

I HAVE a new accumulator which I charge at 2 amps., but cannot get it high enough to read 1300, although after gassing freely it reads 1250 and each cell 2.5 volts. When the battery has been taken off the charger and placed in the set, the panel meter reads 6.5, but after the set has been working for about five minutes, volume decreases until the meter shows about 5.5 volts. On adjustment of the filament rheostats, volume remains steady. Should this be so? Occasionally I notice while the set is working that the meter flickers.—"A.W." (Auckland).

A.: 1250 specific gravity is the normal for accumulators, and the rapid falling-off in voltage until a steady value is attained is quite normal. The flickering of the needle would seem to indicate a loose connection in the filament wiring. At the same time, look over the set for a short circuit.

A Short-Wave Adaptor.

I HAVE a factory-made set, and I wish to know whether it is advisable to instal a shortwave adaptor or to purchase a shortwave set.—"N.W.A." (Wairoa).

A.: It is rather difficult to say off-hand. Some sets suit an adaptor more than others. The best plan would be, if possible, to try an adaptor on the set before purchasing it. Usually, a special short-wave set works better than an adaptor to a broadcast set.

"Pentode's" Dynamic Cone.

"W.D.C." (Waipawa) writes: Could two good magnets be used instead of the field pot specified?

A.: No. An electro-magnet such as created when a coil of wire passes round a soft iron core is very much more powerful than any bar magnet, and a very powerful magnet is essential to a moving coil loud-speaker.

I am thinking of making the electrolytic trickle charger for charging "B" batteries. Would it be suitable?

The trickle charger was not intended to supply heavy current and is not so efficient as a valve rectifier such as "Pentode" will describe. It was a good cheap charger.

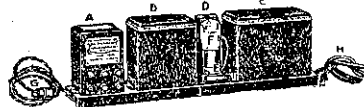
The same correspondent has described a method of neutralisation which will be elaborated in the "Beginner Corner."

"Pentode's" Trickle Charger.

"W.C.M." (Auckland) has made the trickle charger but has not found it to work satisfactorily. He is using a step-down transformer which delivers 10 volts, and it appears as though he is not getting sufficient current. The transformer is rated at 1 amp. at 10 volts. Would it improve matters if I removed

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the secondary winding and put on more turns, or should I procure a larger one?

A.: It is unnecessary to purchase a new one, simply double the number of turns on the secondary. The transformer will then deliver about 20 volts, which will give a higher charging rate.

To Prevent Distortion.

"BACK BLOCKS" asks the following questions:—

My three-valve set distorts when it has to handle any volume; would a pentode in the last stage prevent this?

A.: A power valve would be the better; see the answer to J.L.S. and the article on the pentode in the latter pages of this issue.

What is the price of a pentode?—Usually 37/6.

Would you recommend an alteration in the value of the grid leak?

A.: A variable grid leak is recommended only in the case of "all wave" receivers, and where distance is to be obtained. It could be mounted on the panel.

Mounting a Milliammeter.

A CORRESPONDENT from Norfolk Island asks: "In what position could a panel mounting milliammeter be mounted?"

A.: Mount it on the panel so as to give balance as far as the other components thereon are concerned, and connect one leg to B+ power and the other to the positive terminal of the speaker.

"Should a one mfd. condenser be placed across the B battery whether this be wet or dry?"

A.: Yes, it is advisable.

An All-Wave Set.

"W.M." (Hawke's Bay) asks the following questions to the combination one-valve receiver described by "Pentode" recently. First, could it be made into an all-wave set. If so, how?

A.: It would be rather complicated, but "Pentode" will describe a very simple one shortly.

Could a "B" eliminator be used?—Yes. Would "C" battery improve reception. If so, where will it be applied?

A.: Yes, slightly. Break the connection between the transformer and the rheostat, and put the battery in here, the positive to the rheostat and the negative to the transformer.

How much wire is needed for wiring in feet, and what is meant by insulating sleeving?

A.: Insulating sleeving (or spaghetti) is composed of an insulating material built up in the form of a narrow tube (like household spaghetti) and this can be slipped over the wire to insulate it properly. About 6½ feet of wire would be necessary to wind the aerial and the reaction coils.

Are the measurements for the panel correct, or should they be 12 x 6?

A.: A printer's error. The size should have been 12 x 6 x 3/16ths, but the mistake is, fortunately, obvious.

What are the measurements for the baseboard?

A.: 12 x 9 should be sufficient.

What gauge wire should be used for the coils and how much?

A.: A quarter of a pound of double cotton covered wire should be ample to complete the job.

Screen-Grid Booster.

"CONSTANTINOPLE" (Matamoras) has constructed "Megohm's" screen grid booster, but cannot get it to work. He has altered the coil to a squirrel cage type, and wonders if this has anything to do with it. Signals are no louder than without the booster, and at the same time has become very unstable. The valve lights brilliantly for a while and then glows to normal again; if the booster is shaken the same thing will happen. "I think the filament must come into contact with the control grid."

A.: It certainly appears as though the valve is at fault. Have it tested and at

the same time check over all the filament wiring. It may be that the electrodes of the valve are unsteady, and there may be a bad connection in the filament wiring. The correspondent has not stated how the booster is applied to his set. It may be that it is incorrectly coupled. The different coil should not affect this.

Changing the Value of a Condenser.

"W.B." (Eastbourne) asks how he might convert a .0005 condenser into a .001.

A.: Connect a .00025 fixed condenser in series with a .0005 variable, or connect a .001 fixed condenser in parallel with a .00025 variable condenser. There

ENQUIRIES HELD OVER.

Many inquiries and suggestions relative to the Screen-Grid Valve have been advanced during the week. These have been held over and will form the basis of a future special article.

is the alternative of removing plates on a .00025. The number of plates for different values was published in the "Beginner Corner" some time ago, and will be republished.

An Eliminator Transformer.

"J.F.T." (Hataitai) has built a battery eliminator, and wonders why it will not work. He includes a diagram which is all right except for the fact that the transformer has no secondary, and the valve is an ordinary receiving valve instead of a rectifying valve. He states that if he places his fingers across the terminals marked "high" he can "get a good kick," and yet it won't work the set.

A.: We are not surprised that the correspondent should get a "good kick," seeing that he was taking 230 volts unrectified. A secondary should be wound on the transformer and this secondary winding centre tapped and connected to a rectifying valve. Full details of a good eliminator will be published in the "Listeners' Guide."

Sundry Points.

"W.N." (Auckland) asks for an all-wave circuit. One will be described by "Pentode."

Would such a set give louder signals than a detector and one stage audio on both broadcast and short waves?

A.: It should do.

Would a wave-trap be necessary?

A.: On the short waves, no broad tuning with a screen grid employed in a broadcast receiver is the great difficulty of that valve, so that a wave-trap would be almost essential, unless devices were incorporated in the set to overcome this broad tuning.

"ALL-WAVER" (Wellington) wants particulars of an all-wave set. He is referred to previous inquiries.

Incorporating the Screen Grid.

"D.C.D.T." (Katikati) asks for details to apply a screen grid to the Browning Drake. Details were given in Vol. 12, No. 37, but the full details will be given in the "Radio Listeners' Guide" in the "Adapted Screen Grid Browning-Drake."

New Zealand Broadcast Stations.

"P.A.H." (Timaru) writes: Can you tell me where the following stations broadcast from?—

4ZO (Barnett's Radio Supplies, Dunedin).
4ZL (Radio Service, Dunedin).
4ZM (J. B. MacEwan, Dunedin).
2BE (Sydney).
9XL (Schenectady, New York).
WGNR (probably WENR, Chicago, Illinois).

Detector Tapping.

"W" (Runanga) writes: I have an eliminator, but am not quite cer-

tain where to put the brown covered wire from the set.

A.: This is usually the detector tapping and should be placed on the 22½-45 tapping.

Details of a Horn.

"A.D." (Christchurch) writes: Could you supply the details for a horn for a Baldwin unit?

A.: The best plan would be to build an exponential horn as described by "Switch" some considerable time ago and recently described in the issue of January 11.

A Noisy Rheostat.

A RHEOSTAT is one of the most simple yet one of the most important pieces of radio apparatus. It can act as a switch, and it is indeed advisable that it should be used as a switch, and it can be used to dim the filaments of the valves, to lengthen their life, and to reduce volume, although this latter is not particularly wise, as a certain amount of distortion is introduced when

the filaments are turned back very much below their stipulated voltage.

A defective rheostat will cause an annoying crackling in the receiver when adjustments to fit are made. There is nothing more annoying in operating a receiver than to find the filament control is "wobbly" or hard to be "nursed" in order to prevent loud crackling noises.

There is no need to endure this annoyance, for a new rheostat can be purchased for a very trifling sum, and fully repays such an expense. But it is not always necessary to go to this expense. Adequate pressure of the spring upon the resistance element—but not undue pressure—are essential points in the smooth operation of the rheostat. Examine this piece of apparatus if it is giving trouble, and see that the moving arm makes a good solid contact with the resistance. Press it down into position, or bend it slightly to obtain smooth but adequate pressure and operation.

UNLESS your aerial is a very short one there is little or no advantage in using two wires for it, while if two wires are used they should be spaced about 6ft. apart, in order to derive any advantage from the second one.

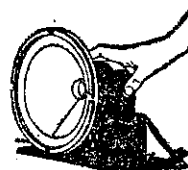
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Next Week's Features

1YA Items

SUNDAY evening's service in the Baptist Tabernacle will be broadcast. The Rev. Joseph Kemp will be preaching, and Mr. Arthur Wilson will be at the organ. A studio concert will follow, the vocalists being Miss M. Atkinson (soprano), and Mr. Frank Sutherland (bass). A number of selected gramophone items, electrically reproduced, will be presented.

ON Tuesday evening, operatic excerpts from Gounod's great opera, "Faust," will include the famous garden scene. The cast will include Miss Marjorie Fair, Madame Irene Ainsley, Mr. Arthur Ripley and Mr. de Montalk; the whole production being under the direction of Madame Irene Ainsley. On the instrumental side of the programme the Studio Trio will contribute selections, including the "Prize Song," from the "Meistersingers" (Wagner-Wilhelmj), while Mr. Eric Waters will be heard in a pianoforte solo, "Eskimo Shivers" (Mayerl). Orchestral music will be relayed from the Majestic Theatre. Mr. A. B. Chappe, while continuing his talk this evening, will speak on "The Maori—His Notable Customs."

THE major portion of the vocal programme on Wednesday evening will be rendered by Madame Mary Towsey's Quartet, their programme including a variety of solos, duets and quartettes. Mrs. Culford Bell will make a welcome reappearance before the microphone in elocutionary items, including the "House by the Side of the Road," and two French-Canadian poems, "Leetle Bateese," and "The Wreck of the Julie Plante." Those old favourites, the Asquiths, will again be heard from 1YA in one of their popular 30 minutes' drawing-room entertainments, while pianoforte solos will be played by Mr. Cyril Towsey. These will include Chopin's "Funeral March." The last instalment of Verdi's great opera "Rigoletto" will be presented this evening, the explanatory notes and libretto being performed by Mr. Karl Atkinson

THURSDAY will mark the presentation of a novelty evening entitled "A Night of Convivialities." We are rather in the dark as to the form of entertainment to be provided, but as a number of well-known and popular artists of 1YA will be contributing, we may expect a number of novel and entertaining surprises. The programme will conclude at 11 p.m. with dance selections.

THE Clarion Quartet, in contributing to Friday evening's programme, will render a number of solos, duets, and quartets, including "In the Rain" (Parks), "Time to Go" (Sanderson), and "Angels Guard Thee" (Godard). Mr. Arthur E. Wilson will present two short organ recitals, the first being given over to "The Works of the Old Masters," and the second dealing with the "Twentieth Century Composers." Mr. Wilson will be assisted by Mrs. J. Litherland, soprano. The Studio Trio will be heard in instrumental selections, while Mr. Eric Waters will play a bracket of pianoforte solos, (a) "Tristesse de Colombine" (Chutte), (b) "Valse in A Flat Major," composed by the player.

THE variety programme for Saturday evening will include the well-known Bohemian Duo, Ingall's Hawaiian Orchestra and the inimitable "Hebrew Two." Making her first appearance at 1YA will be Miss Thelma James in popular soprano solos. Messrs. Tom Harris and Jack Mackle will be heard in a dramatic recital from Shakespeare's "Merchant of Venice," while the Studio Orchestra will provide a number of popular orchestral selections. The programme will conclude at 11 p.m. with dance music.

2YA Features

ON Sunday evening the service of the Vivian Street Church of Christ will be relayed, and at its conclusion

the concert by the Port Nicholson Band will be relayed from the Grand Opera House. The band plays under the conductorship of Mr. J. J. Drew.

ON Monday evening a programme of varied interest will be presented.

Mrs. W. Fraser Morrish, whose initial performance on April 12 was such a success, will be the soprano soloist for the evening. Her items will be "Damon," "Songs My Mother Taught Me," and "A Little Fleet of Cloud Boats." A solo from the musical play, "The Garden of Allah," will be one of the songs to be featured by Mr. S. E. Rodger, the well-known baritone, who



—Steffano Webb, photo.

Miss M. Russell, Contralto.
A member of 3YA's talented Radiolians.

will also sing "Easter Flowers" and "If I Might Only Come to You." Miss Nora Greene (contralto) has chosen for her items the aria from "Faust," "When All Was Young," a number by Roger Quilter entitled "June," and Schubert's "For Music," together with Kennedy Russell's "Life's Sunset Bar." That well-known tenor aria from Handel's "Judas Maccabeus," "How Vain is Man," will be one of Mr. Roy Hill's items, his second number being "Ah! Moon of My Delight," from Lehmann's "In a Persian Garden." Mr. Hill will also sing with Miss Nora Greene the "Barcarolle" from "The Tales of Hoffman."

MISS THELMA WILLOUGHBY, winner of the Schubert gold medal at the last Wellington Competitions Festival, will be heard in a bracket of two pianoforte solos, which are a good example of modern music, namely, Chasins's "Flirtation in a Chinese Garden" and "Rush Hour in Hong-Kong." Miss Willoughby is a brilliant young pianist from the studio of Mr. Gordon Short.

AN instrumental item of outstanding interest on Monday evening will be Popper's "Requiem," written for three cellos and piano. This number will be rendered by Mr. G. Ellwood, Mr. Cecil Smallbone, Miss Lilla Hill and Mr. M. Dixon.

LISTENERS will no doubt be pleased to hear that arrangements have been completed for relaying brief organ recitals by Mr. H. Temple White, whose playing was so popular last year. Mr. White's items will be "Postlude in G," by Read, and Easthope Martin's "Even-song." An item which will prove to be a popular novelty will be "The Lost Chord," played as a cornet solo with organ accompaniment. Mr. W. Sneddon will be the cornet soloist.

ON Tuesday the usual light popular class of programme will be given. Mr. Austin Blackie, the popular tenor, will sing Schubert's "Serenade" and "I Know of Two Bright Eyes," by Clutsam. Mrs. Mabel Jackson, a talented singer of popular songs, will be heard in two numbers, "Beloved" and "My Honeymoon Waltz." Mr. E. A. Sargent will provide the humour of the programme, his items being "Because I Were Shy" and "Quick Work," the latter a Mel. B. Spurr number. At 9.30 the usual dance programme will commence.

Wednesday evening—Municipal election results.

ON Friday evening the Philharmonic Quartet will render a programme of vocal gems from grand opera and musical comedy. Miss Ena Rapley (soprano) will sing "Musetta's Song" (from "La Boheme"); Mr. Arthur Brady (baritone), "A Jovial Monk am I" (from Audran's "La Poupée"); and Mr. Edwin Dennis, the well-known tenor solo from "La Boheme," "Thy Tiny Hand is Frozen." Miss Madge Freeman will be heard in a solo number from "The Quaker Girl," "Come to the Ball," and in a duet from "Mercenary Mary." Another item of interest will be the quartet, "A Regular Royal Queen" from "The Gondoliers." Mr. Victor S. Lloyd, the popular entertainer, will relate another of his experiences.

Concluding the evening's programme on Friday the third instalment of the opera "Rigoletto" will be broadcast.

SATURDAY evening's programme will be of a bright and entertaining nature. The popular Melodie Four will provide the vocal items, their numbers comprising three quartets, "Riding on a Dream Train" (by Lewis), "Lullaby" (by Brahms), and "Drifting and Dreaming." Mr. Sam Duncan (tenor) will sing "Violets" and Mr. W. W. Marshall (bass), "The Mountains of Mourne." Mr. Frank Bryant (tenor) has chosen for his item "The Joy Bird" and Mr. R. S. Allwright "Sleepy Hollow Tune." Steel guitar items will be played by Messrs. Berthold and Bent, and Mr. Len Ashton will contribute two humorous pieces, "The Parson of Puddle" and "That Old Angora Cat."

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3YA Features

THE Beckenham Male Quartet will be associated with Derry's Military Band on Monday evening. The popular band and the equally popular vocalists have arranged splendid programmes. Concerted numbers by the quartet will include the "Mother Goose" medley, "Philosophy," "Twilight Shades Descending," "Piccaninny Lullaby," and "Ramona." There will be a duet, "Sweet Genevieve." Solos will comprise "Beware of the Maiden" and "The Garden of Afterwards."

Also contributing to Monday's programme will be Miss M. J. Gilbert, soprano, and the Studio Trio. The records for the evening will include items by Harry Lauder, Peter Dawson, Roy Smeck (guitar), and orchestral numbers.

Mr. E. J. Bell will give a talk on books on Monday evening at 7.30.

THE concert programme for Wednesday will be subject to alteration on account of the municipal election results. But a splendid programme has been arranged, and heading the artists will be Miss Edith Harhy, the eminent Welsh pianiste-composer-singer. Also on the programme will be the Dulcet Quartet. Instrumental music will be provided by the Bohemian Quintet.

A VERY interesting feature of Wednesday's programme will be the items by Mr. A. G. Thompson, baritone. His three numbers have been composed by himself. Mr. Thompson is shortly leaving on a trip to the Old Land.

THE Madame Gower Burns Grand Opera Quartet will supply the vocal portion of Thursday evening's programme. Miss Myra Pollard, mezzo-soprano, is now a member of this party. The quartet numbers will be "London Town" and "Fly, Singing Bird, Fly." All the members of the quartet will sing solos. Worthy of special mention will be the dramatic song to be sung by Mr. James Filer. Emanuel's "The Desert." Pianoforte solos will be played by Miss Dorothy Davies, there will be cello solos by Mr. Harold Beck and selections by the Studio Four.

THE Radiolians will feature excerpts from "The Maid of the Mountains" on Friday evening. They will be associated with the Rhythmic Duo, singers of popular songs, and the Marston-Bailey Dance Band.

MRS. BERYL WINDSOR, of the West Coast, one of the prize winners in the recent 2YA poetry com-

petition, will recite her own composition on Saturday evening. It is entitled "The Bushman's Child." Another recitation to be given by her will be "If Life were a Play." Mrs. Windsor is a talented reciter and she also has a distinct literary gift.

Other artists who will appear in the vaudeville programme on Saturday evening will be Miss Lottie Colville (soprano), the Melody Girls (songs with ukulele accompaniment), Mr. A. Couch (tenor), Miss Doris Webb (recitations to piano accompaniment), Mr. Robert Samson (baritone), Miss Irene Morris (violin), and the Studio Trio.

4YA Notes

THE service at the Methodist Central Mission, where the preacher will be the Rev. Hinton, will be broadcast on Sunday evening. After this service a concert will be relayed from the St. Kilda band rotunda.



—Steffano Webb, photo.

Mr. R. Samson, baritone, who broadcasts from 3YA regularly.

The second lecturette on drama by Mr. Lloyd Ross, M.A., of the W.E.A., will be given on Tuesday evening at 7.40. On this occasion he will deal with "Tragedy."

THE concert programme for the evening will be provided by the St. Kilda Band, assisted by 4YA artists. The band programme will be one of the best, selected by Mr. James Dixon, the conductor. Miss Eva Scott will sing "Four Leaf Clover," "Little Boy Blue" and "Flowers of the Forest." Mr. Neil Black's items will be "Gypsy Love," "Not Understood," and "Oh, to be a Gypsy." Mr. Carl Moller, entertainer, will recite three numbers which are sure to be very popular.

"**THERE** was a Jolly Miller," the opening chorus of "The Serenaders" on Wednesday evening, gives the cue to the evening's programme. Their concluding item will be "Begone Dull Care." Besides these performers, who will also sing solo items, the Dunedin Banjo Trio will play some of the latest popular airs, and humorous sketches will be performed by Miss Anita Winkel and Major F. H. Lampen,

Wednesday evening—municipal election results.

On Thursday evening at 7.30, Mr. H. Greenwood, of the Athenaeum, will give a talk on books.

THREE popular songs will be sung by Mrs. Charles Isaacs on Friday evening: "Danny Boy," "Angus McDonald" and "There's a Land." The contralto songs by Miss Irene Horniblow will be, "The Sandman," "The Arrow and the Song" and the old English song, "The Oak and the Ash." Baritone solos will be sung by Mr. A. Lungley. Miss Joyce Hould will recite "The Kings" (by Galsworthy) and "The Rider at the Gate" (Masefield). Popular instrumental music will be played by the 4YA Broadcasting Trio and there will be some specially chosen records.

SATURDAY evening's programme will be of the vaudeville type. Topical hits will be sung by Mr. Geo. Wiseman and popular songs by Miss Minna Ahlers. Miss D. Carty will sing, "Scenes that are Brightest," "The Song That Reached My Heart" and "They're Far, Far Away." Scottish humour will be provided by Mr. Buster Brown and other humour by Mr. Carl Moller.

Children's Sessions

AT 1YA.

TUESDAY, APRIL 30.—And now Uncle George what have you for us? Jolly stories and jokes as usual, and songs and piano items from some of our small entertainers.

WEDNESDAY.—May 1, May-Day, and it brings Uncle Tom, so Uncle Tom must be "Queen of the May." Uncle Tom will be in very good form to-night, and will have fairies with him to while away the hour.

THURSDAY.—Peter Pan has many interesting things for to-night, and we also hope to have a talk for the older boys and girls on suitable occupations to follow.

FRIDAY.—Nod and Aunt Jean at the helm, so all gather round for the Happy Hour. Cousins at the piano, and birthday greetings to the birthday folk.

SATURDAY.—Cinderella to-night. She has a great store of stories, jokes and puzzles. Several little cousins will also be present presenting a fairy play.

SUNDAY.—Children's Song Service conducted by Uncle Leo assisted by Beresford Street Sunday School.

AT 2YA.

MONDAY, April 29.—A cheery little programme for to-night. Miss Eva Hall is bringing down some clever cousins to entertain you and "Gumbo" will again tell one of his fairy stories. Uncle Jeff will ask puzzles and sing the good-night song.

TUESDAY.—The pupils of Miss McBain will give you a treat this evening—also Cousins Betty and Diana, and big Cousin Teddie will give another of his very interesting short lectures. Uncle Jim will send birthday greetings.

THURSDAY.—A splendid programme for this happy hour. The pupils of Mrs. Theo. Hills have lots of new recitations, songs and pianoforte items. Uncle George will send birthday greetings.

FRIDAY.—Mr. W. F. Aked has arranged for some little cousins to come this evening, also "The Story Book Lady." Big Brother Jack with greetings and the Happy Song will be here as usual.

SATURDAY.—Such a happy hour to-night. The pupils of Miss Edna Purdie will entertain with recitations, songs, etc. Uncle Toby will greet you in his own bright way and maybe he will sing to you.

SUNDAY.—The children's song service will be conducted by Uncle George, assisted by St. Peter's Choristers, under Mr. Short.

AT 4YA.

TUESDAY, April 30.—The first kind of music anybody played was the drum, and the thin music of the pipes made by blowing through a reed. We have had the Moray Place drum and fife band before, but they are good, and you can't have a good thing too often. So here they are again. And Mr. Announcer and Big Brother Bill swopping riddles. Letters and the radio postie of course.

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Full Programmes for Next

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Sunday, April 28

1YA, AUCKLAND (333 METRES)—SUNDAY, APRIL 28.

- 3 p.m.: Selected gramophone items.
 4.0: Literary selection by the Announcer.
 4.8: Further gramophone items.
 4.30: Close down.
 6.0: Children's session conducted by Uncle Leo.
 6.55: Relay of Divine service from Beresford Street Congregational Church (Preacher, Rev. Lionel B. Fletcher; organist, Mr. Arthur Wilson).
 8.45: Orchestral—New Queen's Hall Orchestra, "Leonore Overture" (Beethoven) (Columbia Record L1978).
 8.53: Soprano solo—Miss Mollie Atkinson, (a) "An Eriskay Love Lilt" (Fraser), (b) "When Love Shall Call" (Tate).
 9.1: Violin solo—Sascha Jacobsen, "Chant Negre" (Kramer) (Columbia Record 01165).
 9.5: Bass solo—Mr. Frank Sutherland, "The Toilers" (Piccolomini).
 9.9: Orchestral—Philadelphia Symphony Orchestra, "Prelude in E Flat Minor" (Bach) (H.M.V. Record D1464).
 9.13: Soprano solo—Miss Mollie Atkinson, "Ave Maria" (Mascheroni).
 9.17: Bass solos—Mr. F. Sutherland, (a) "The Last Call" (Sanderson), (b) selected.
 9.24: Choruses—Victor Chorus, (a) "Anvil Chorus" ("Il Trovatore"—Verdi), (b) "Pilgrims' Chorus" ("Tannhauser"—Wagner) (H.M.V. Record EA89).
 9.30: Close down.

2YA, WELLINGTON (420 METRES)—SUNDAY, APRIL 28.

- 3 p.m.: Afternoon session—Selected studio items.
 4.30: Close down.
 6.0: Children's Sunday session conducted by Uncle George.
 7.0: Relay of service from Church of Christ, Vivian Street (Preacher, Pastor W. G. Carpenter; organist, Mrs. Simrock; choirmaster, Mr. Will Mason).
 8.15 (approx.) Relay from Grand Opera House of recital by the Port Nicholson Silver Band under the conductorship of Mr. J. J. Drew.
 Close down.

3YA, CHRISTCHURCH (306 METRES)—SUNDAY, APRIL 28.

- 3.0 p.m.: Afternoon session—selected studio items.
 4.30: Close down.
 5.30: Children's song service.
 6.15: Hymn chimes.
 6.30: Relay of service, St. Paul's Presbyterian Church.
 Preacher: Rev. W. B. Bower Black.
 Choirmaster: Mr. H. Blakeley.
 Organist: Mr. Norman Williams.
 7.45: (approx.) Overture—London Symphony Orchestra, "Impresario Overture" (Mozart) (H.M.V. Record D1362).
 7.49: Soprano recitative and aria—Miss Frances Hamerton, "O Let Eternal Honours" ("Mighty Kings") (Handel).
 7.54: Violin solos—(a) Isolde Menges, "Air on the G String" (Bach); (b) Fritz Kreisler, "Caprice Viennois" (Kreisler) (H.M.V. Records D1288 and DB1091).
 8.0: Contralto solo—Miss Belle Renaut, "Crucifixion" (Curran).
 8.4: Orchestral—Philadelphia Symphony Orchestra, "Symphony in D Minor" (Third Movement—Allegro) (Franck) (H.M.V. Records D1407-8).
 8.16: Bass solo—Mr. T. D. Williams, "Honour and Arms" (Handel).
 8.21: Orchestral—Philadelphia Symphony Orchestra, "I Call Upon Thee, Jesus" (Bach) (H.M.V. Record D1464).
 8.25: Tenor solo—Mr. Russell Sumner, "My Strength is in the Living God" ("Samson") (Handel).
 8.30: Anthem—Melodious Four, "The Wilderness" (Goss).
 8.34: Grand organ solo—C. Whittaker-Wilson, "Largo" (Handel) (H.M.V. Record C1237).
 8.38: Tenor and bass duet—Melody Duo, "Go, Baffled Coward, Go" ("Samson") (Handel).
 8.42: Vocal duet—Florence Austral and Browning Mummery, "Miserere" ("Il Trovatore") (Verdi) (H.M.V. Record D1302).
 Organ solo—Marcel Dupre, "Christ Came to Jordan" (Bach) (H.M.V. Record B471).
 8.50: Soprano solo—Miss Frances Hamerton, "O, For the Wings of a Dove" (Mendelssohn).
 8.55: Orchestral—Victor Symphony Orchestra, "Dance of the Hours" (Ponchielli) (Zonophone Record EF12).
 9.2: Weather report.

- 9.7: Tenor solo—Mr. Russell Sumner, "For All Eternity" (Mascheroni).
 9.11: Grand organ and cornet duo—Arnold Grier, "The Lost Chord" (Sullivan) (Zonophone Record A309).
 9.15: Contralto solo—Miss Belle Renaut, "The Rosary" (Nevin).
 9.19: Orchestral—Royal Albert Hall Orchestra, (a) "Song of Morning" (Elgar); (b) "Song of Night" (Elgar), (H.M.V. Record D1236).
 9.27: Bass solo—Mr. T. D. Williams, "The Two Grenadiers" (Schumann).
 9.31: Vocal quartet—Melodious Four, "Then Round About the Starry Throne" (Handel).
 9.36: Close down.

4YA, DUNEDIN (463 METRES)—SUNDAY, APRIL 28.

- 5.30 p.m.: Children's song service conducted by Big Brother Bill.
 6.30: Relay of service from Methodist Central Mission (Preacher, Rev. Hinton organist, Mr. Charles A. Martin).
 8.5: Relay from St. Kilda Band Rotunda of concert by the St. Kilda Band under the conductorship of Mr. James Dixon.
 9.15: Close down.

Monday, April 29

1YA, AUCKLAND (333 METRES)—MONDAY, APRIL 29.

SILENT DAY.

2YA, WELLINGTON (420 METRES)—MONDAY, APRIL 29.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 3.40: Relay from Messrs. Kirkcaldie and Stains's tearooms of music by the Trio.
 4.0: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Children's session, conducted by Uncle Jeff.
 6.0: Dinner session.
 Orchestral—Royal Opera Orchestra, (a) "Sylvia Ballet—The Huntresses"; (b) "Sylvia Ballet—Intermezzo and Valse Lente" (Delibes) (H.M.V. Record C1417).
 Violin solo—Fritz Kreisler, "Humoresque" (Dvorak) (H.M.V. Record DB1091).
 6.12: Tacet.
 6.15: Orchestral—Royal Opera Orchestra, "Sylvia Ballet—Pizzicato and Procession of Bacchus" (Delibes) (H.M.V. Record C1418).
 Organ solo—Arthur Meale—"The Pilgrim's Song of Hope" (Bateste) (H.M.V. Record C1277).
 6.27: Tacet.
 6.30: Orchestral—Marek Weber's Orchestra, "Potpourri of Waltzes" (Robert) (H.M.V. Record C1544).
 Violin solo—Yehudi Menuhin, "La Capricciosa" (Ries), (H.M.V. Record DA1003).
 6.41: Tacet.
 6.45: Band selection—Band of the Garde Republicaine of France, "Carmen—Entr'acte" (Bizet) (Columbia Record O2747).
 6.53: Tacet.
 7.0: News session—market reports and sports results.
 7.40: Lecture—Mr. A. J. Nicholls (representative of the Hutt Valley Horticultural Society), "Gardening."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—Orchestra, "Fierrabras" (Schubert).
 8.10: Soprano solo—Mrs. W. Fraser Morrish, "Damon" (Strange).
 8.14: Pianoforte solos—Miss Thelma Willoughby, (a) "Flirtation in a Chinese Garden" (Chasins); (b) "Rush Hour in Hong Kong" (Chasins).
 8.21: Baritone solo—Mr. S. E. Rodger, "The Garden of Allah" (Marshall).
 8.25: Instrumental—Orchestra, (a) "Legende" (Svendsen); (b) "Danse Macabre" (Saint-Saens).
 8.33: "Kohu" will relate some Maori anecdotes.
 8.40: Contralto solos—Miss Nora Greene, (a) Aria, "When All Was Young" ("Faust") (Gounod); (b) "June" (Quilter).
 8.45: Tenor solo—Mr. W. Roy Hill, "How Vain is Man" ("Judas Macabeus" (Handel).
 8.50: Instrumental quartet (three cellos and piano)—Messrs. G. Ellwood, Cecil Smallbone, Mil Lilla Hill, and Mr. M. Dixon, "Requiem" (Popper).
 8.57: Vocal duet—Jno. Hislop and Apollo Granforte, "O Mimi, Tu Pici non Tornì" (Ah, Mimi, You Will Never Come Back to Me) ("La Boheme") (Puccini) (H.M.V. Record DB939).

Week-all Stations-to Mar. 5

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- 9.3: Relay from Taranaki Street Methodist Church of Organ Recital by Mr. H. Temple White: (a) "Postlude in G" (Read); (b) "Even-song" (Easthope Martin); (c) "The Lost Chord" (cornet solo with organ accompaniment). (soloist, Mr. W. Sneddon).
- 9.18: Soprano solos—Mrs. W. Fraser Marrish, (a) "Songs My Mother Taught Me" (Dvorak); (b) "A Little Fleet of Cloud Boats" (Woodforde-Finden).
- 9.26: Suite—Orchestra, "Ballet Russe" (Part 2) (Luigini). 1. Valse Lente. 2. March Russe.
- 9.31: Baritone solos—Mr. S. E. Rodger, (a) "Easter Flowers" (Sanderson); (b) "If I Might Only Come to You" (Squire).
- 9.33: Violin solo—Erica Marini, "Introduction and Tarantelle" (Sarasate) (H.M.V. Record D1445).
- 9.42: Vocal Duet—Miss Nora Greene and Mr. W. Roy Hill, "Night of Stars" ("Barcarolle" from "Tales of Hoffman") (Offenbach).
- 9.46: "Kohu" will relate further anecdotes.
- 9.53: Contralto solos—Miss Nora Greene, (a) "To Music" (Schubert); (b) "Life's Sunset Bar" (Russell).
- 9.58: Tenor solo—Mr. W. Roy Hill, "Ah! Moon of My Delight" ("In a Persian Garden") (Lehmann).
- 10.2: Choir—Russian State Choir, "Storm on the Volga" (Pastshenko) (H.M.V. Record C1498).
- 10.10: Rhapsody—Orchestra, "Slavonic Rhapsody No. 3" (Dvorak)
- 10.20: Close down.

3YA, CHRISTCHURCH (306 METRES)—MONDAY, APRIL 29.

- 3.0 p.m.: Afternoon session—selected studio items.
- 4.25: Sports results to hand.
- 4.30: Close down.
- 7.15: News session.
- 7.30: Talk—Mr. E. J. Bell—Book Review.
- 8.0: Chimes.
Programme by Derry's Military Band, under the conductorship of Mr. J. M. Scott, and assisting artists.
- 8.1: March—Band, "Colonel Bogey" (Alford).
Waltz—Band, "Girl Of My Dreams" (Panly).
- 8.10: Male quartet—Beckenham Quartet, "Mother Goose" (medley (Gracy)).
- 8.14: Instrumental trios—Christchurch Broadcasting Trio, (a) "Canzonetta" (Mathais); (b) "Russian Mazurka" (Glinka).
- 8.22: Baritone solo—Mr. K. B. Archer, "Beware of the Maidens" (Day).
- 8.26: Military fantasia—Band, "Our Soldiers" (Moore).
- 8.34: Soprano solo—Miss M. J. Gilbert, "Little Lady of the Moon" (Contes).
- 8.38: Male quartet—Beckenham Male Quartet, "Philosophy" (Williams).
- 8.42: Bell intermezzo—Band, "Bells o' Somerset" (Hurst).
March—Band, "The Jolly Coppersmith" (Peter).
- 8.52: Bass-baritone solo—Peter Dawson, "Cruel Is He" ("Otello") (Verdi) (H.M.V. Record C1401).
Orchestral—Salon Orchestra, "Serenade" (Schubert) (H.M.V. Record EA358).
- 8.58: Male quartet—Beckenham Male Quartet, "Twilight Shades Descending" (Banks).
- 9.2: Weather report.
- 9.7: Comedian—Sir Harry Lauder, "Just Got Off the Chain" (Lauder) (H.M.V. Record D1434).
- 9.11: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cradle Song" (Schubert); (b) "Hungarian Dance in D Minor" (Brahms).
- 9.17: Tenor solo—Mr. E. R. Petman, "The Garden of Afterwards" (Cleaver).
- 9.21: Waltz—International Concert Orchestra, "Luxembourg Waltz" (Lehar) (Zonophone Record EF9).
- 9.25: Soprano solos—Miss M. J. Gilbert, (a) "If I Built a World For You" (Lehmann); (b) "Be Happy" (Drummond).
- 9.31: Vocal quartet—Beckenham Male Quartet, "Piccaninny Lullaby" (Macy).
- 9.35: Descriptive Fantasia—Band, "A Motor Ride" (Bidgood).
- 9.42: Tenor and bass duet—Beckenham Duo, "Sweet Genevieve" (Tucker).
- 9.46: Guitar solo—Roy Smeck, "Itchin' Fingers" (Robison) (Zonophone Record BB119).
- 9.49: Male quartet—Beckenham Male Quartet, "Ramona" (Wayne).
- 9.53: Foxtrot—Band, "You're a Real Sweetheart" (Friend).
March—Band, "On the Quarter Deck" (Alford).
- 10.3: Close down.

4YA, DUNEDIN (463 METRES)—MONDAY, APRIL 29.

SILENT DAY.

Tuesday, April 30

1YA, AUCKLAND (333 METRES)—TUESDAY, APRIL 30

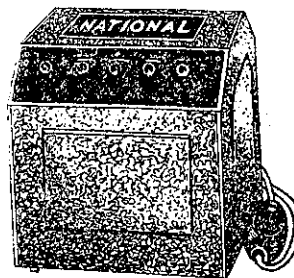
- 3.0 p.m.: Selected studio items.
- 4.0: Literary selection by the Announcer.
- 4.8: Studio items.
- 4.25: Sports results to hand.
- 4.30: Close down.
- 6.0: Children's session, conducted by Uncle George.
- 7.15: Talk—Mr. Geo. Campbell, "Motoring."
- 7.30: News and market reports—Book Review.
- 8.0: Chimes.
- 8.1: Relay of overture from Majestic Theatre Orchestra.
- 8.11: Tenor solo—Mr. Arthur Ripley, "Little Mother O' Mine" (Barlegh).
- 8.15: Violin solos—Fritz Kreisler, (a) "Caprice Viennois" (Kreisler); (b) "Humoresque" (Dvorak) (H.M.V. record DB1091).
- 8.23: Contralto solo—Madame Irene Ainsley, "Irish Lullaby" (Fahy).
- 8.27: Instrumental trio—Studio Trio, "Prize Song" (from "The Mastersingers of Nuremberg") (Wagner-Wilhelm).
- 8.37: Bass solo—Mr. J. de Montalk, selected.
- 8.41: Talk—Mr. A. B. Chappell, M.A., "The Maori—His Notable Customs."
- 8.56: Relay of orchestral entr'acte from Majestic Theatre.
- 9.0: Weather report.
- 9.9: Pianoforte solo—Mr. Eric Waters, "Eskimo Shivers" (Mayerl).
- 9.13: Soprano solo—Miss Marjorie Fair, "Fiddle and I" (Goodeve).
- 9.17: Instrumental trio—Studio Trio, "Etienne Marcel" (Saint-Saens).
- 9.26: Presentation of excerpts from "Faust" (Gounod) produced under the direction of Madame Irene Ainsley:

CAST:

Marguerite	Miss Marjorie Fair.
Faust	Mr. Arthur Ripley.
Mephistopheles	Mr. J. de Montalk.
Siebel and Martha	Madame Irene Ainsley.
Contralto solo—"Flower Song."	
Tenor solo—"All Hail! Thou Dwelling."	
Soprano solo—"King of Thule."	
Entr'acte—Weber's Orchestra, "Faust" selection (Gounod, arrgd. Weber) (H.M.V. record C1511).	
Soprano solo—"Jewel Song."	
Vocal quartet—"I Speak to Madame Schwerlein."	
Vocal duet—"And So You Never Take a Rest."	
Entr'acte—Weber's Orchestra, "Faust" selection (Gounod, arrgd. Weber) (H.M.V. record C1511).	
Vocal quartet—"Sir, You Do Not Hear."	

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Vocal duet—"The Hour is Late."
Vocal trio—"Holy Angels."

10.0: Close down.

2YA, WELLINGTON (420 METRES).—TUESDAY, APRIL 30.

3 p.m.: Chimes of the G.P.O. clock.

3.1: Special programme of player piano selections and gramophone items, arranged by Messrs. F. J. Pinny, Ltd. All player selections will be played on the Meltona Super de Luxe model.

4.30 and 4.55: Sports results to hand.

5.0: Children's session, conducted by Uncle Jim.

6.0: Dinner session. Orchestral—International Concert Orchestra, (a) "Gold and Silver" Waltz (Lehar) (Zonophone Record EF22); (b) "Spanish Dancer" (Di Chiara) (Zonophone Record EF15).

6.8: Tacet.

6.15: Violin and kinema organ—Chas. Williams, "Somewhere a Voice is Calling" (Tate) (Zonophone Record 5194).

Orchestral—Victor Concert Orchestra, (a) "Minuet in G" (Paderewski); (b) "Air Louis XIV—Amaryllis" (Thys) (H.M.V. Record BA240).

6.25: Tacet.

6.30: Orchestral—Light Symphony Orchestra, "Parsiflage" (Francis) (H.M.V. Record B2754).

Violin solos—Fritz Kreisler, (a) "From the Land of the Sky Blue Water" (Cadman); (b) "Aloha-oe" (Farewell to Thee) (Lilinalani) (H.M.V. Record DA745).

6.40: Tacet.

6.45: Orchestral—International Concert Orchestra, "Tesoro Mio" (My Treasure) (Becucci) (Zonophone Record EF15).

Orchestral—Symphony Orchestra, (a) "Love the Magician" (De Falla); (b) "Spanish Dance" (De Falla) (H.M.V. Record D1453).

6.57: Tacet.

7.0: News session—market reports and sports results.

7.40: Lecturette—Representative of the Agricultural Department, "For the Man on the Land."

8.0: Chimes of the G.P.O. clock.

8.1: March—Orchestra, "Marche de Tannhauser" (Wagner).

Waltz—Orchestra, "Tales from the Orient" (Strauss).

8.11: Tenor solo—Mr. G. Austin Blackie, "Serenade" (Schubert).

8.15: Hawaiian selections—Queenie and David Kali, (a) "Hawaiian March" (Ellis); (b) "Hilo March" (Pale) (Parlophone Record A2372).

8.21: Humour—Mr. E. A. Sargent, "Because I Were Shy" (Johnson).

8.26: Trombone solo with orchestral accompaniment—Mr. Harold Onkes, "The Soldier's Toast" (Tessier).

March—Orchestra, "Trot de Cavalerie" (Rubinstein).

8.34: Popular songs—Mrs. Mabel Jackson, (a) "Beloved" (Kahn); (b) "Together" (de Sylva).

8.41: Baritone solos—Mr. Stanley Sayers, (a) "Tit Willow" ("The Mikado") (Sullivan); (b) "The Cobbler's Song" ("Chu Chin Chow") (Sullivan).

8.48: Tenor solo—Mr. G. Austin Blackie, "I Know of Two Bright Eyes" (Clutnam).

8.52: Instrumental—Orchestra, repeat number.

9.0: Weather report.

9.2: Novelty—Orchestra, "In a Persian Market" (Ketelbey).

9.8: Humour—Mr. E. A. Sargent, "Quick Work" (Spurr).

9.13: Baritone solo—Mr. Stanley Sayers, "The Pretty Creature" (Lane Wilson).

9.17: Popular song—Mrs. Mabel Jackson, "Honeymoon Waltz" (Renault).

9.21: Song suite—Orchestra and singers—"J. L. Molloy's Songs" (arr. Baynes): 1. The Vagabond. 2. The Kerry Dance. 3. Thady o' Flynn. 4. To-morrow will be Friday. 5. Home, Dearie, Home. 6. Love's Old Sweet Song. 7. The Carnival.

9.31: "His Master's Voice" dance programme: Overture—H.M. Coldstream Guards, "Poet and Peasant" (Suppe) (H.M.V. C1315).

9.38: Foxtrot—Henry Busse's Orchestra, "One Step to Heaven" (Klages) (H.M.V. EA437).

Foxtrot—Arcadians Dance Orchestra, "There's Something About a Rose" (Fain) (Zonophone 5169).

Waltz—The Troubadours, "Diane" (Rapee) (H.M.V. EA269).

9.49: Duet with violin, banjo, guitar, and harmonica,—Dalhart and Robinson, "My Blue Mountain Home" (Robison) (H.M.V. EA295).

Jazz piano solo—Pauline Alpert, "The Dancing Tambourine" (Ponce) (Zonophone EE98).

Foxtrot—Arcadians Dance Orchestra, "Chilly-Pom-Pom-Pee" (Bryan) (Zonophone 5169).

Foxtrot—Henry Busse's Orchestra, "How About It?" (Klages) (H.M.V. EA437).

10.2: Humour—Norman Long, "Under the Bazunka Tree" (Lee) (H.M.V. B2454).

Wurlitzer organ solo—Jesse Crawford, "High Hat" (Alter) (H.M.V. EA426).

Foxtrot—Geo. Olsen and his Music, "Old Man Sunshine" (Dixon) (H.M.V. EA422).

Foxtrot—Geo. Olsen and his Music, "Doin' the Raccoon" (Klages) (H.M.V. EA446).

Foxtrot—Louisiana Sugar Babies, "Persian Rug" (Kahn) (H.M.V. EA397).

10.14: Tenor solo—Jno. McCormack, "Somewhere a Voice is Calling" (Tate) (H.M.V. DA914).

Waltz—Hilo Hawaiian Orchestra, "Kawaihau Waltz" (Kealakai) (H.M.V. EA397).

Foxtrot—Shilkret's Orchestra, "Baby's Blue" (Hupfeld) (H.M.V. EA422).

Foxtrot—Statler Pennsylvanians, "It Goes Like This" (Caesar) (H.M.V. EA446).

10.25: Bass-baritone solo—Peter Dawson, "Now Your Days of Philandering are Over" (Mozart) (H.M.V. C1401).

Violin with kinema organ—Elsie Southgate, "Rose in the Bud" (Forster) (Zonophone 5109).

Foxtrot—Nat Shilkret's Orchestra, "Nagasaki" (Dixon) (H.M.V. EA411).

Guitar and piano—Roy Smeck and Art Kahn, "Itchin' Fingers" (Robison) (Zonophone EE119).

Waltz—Nat Shilkret's Orchestra, "Till we Meet Again" (Egan) (H.M.V. EA412).

10.42: Whispering Voices—Devonshire Dance Band, "At the End of an Irish Moonbeam" (Golden) (Zonophone BB84).

Community Lancers—Bert Firman's Dance Orchestra, Figures 1, 2, 3, and 4 (Zonophone 5117).

Community Lancers—Figure 5 (Zonophone 5118).

11.0: Close down.

3YA, CHRISTCHURCH (306 METRES).—TUESDAY, APRIL 30.

(SILENT DAY.)

4YA, DUNEDIN (463 METRES).—TUESDAY, APRIL 30.

3.0: Town Hall chimes

3.1: Relay of instrumental music from the Ritz.

4.25: Sports results.

4.30: Close down.

6.0: Children's session, conducted by Big Brother Bill.

7.15: News session.

7.40: "Drama" Lecturette No. 2 by Mr. Lloyd Ross, M.A. "Tragedy" under the auspices of the Workers' Educational Association.

8.0: Town Hall chimes.

Concert by St. Kilda Band, under the direction of Mr. James Dixon, and assisting artists

8.1: Overture—Band, "Raymond" (Thomas).

8.10: Soprano solos—Miss Eva Scott, (a) "Four Leaf Clover" (Browniel), (b) "Little Boy Blue" (Joyce).

8.18: Waltz Lente—Band, "Golden Dreamland" (Rimmer).

March—Band, "The Voice of the Guns" (Alford).

8.28: Bass solo—Mr. Neil Black, (a) "Gipsy Love" (Herbert); (b) "Not Understood" (Houghton).

8.35: Cornet with Band Accompaniment, "Redcap" (Moss).

8.39: Baritone and Male Quartet—Jno. Goss, (a) "Blow the Man Down"; (b) "Tom's Gone to Hilo" (Arr. Terry) (H.M.V. Record B2698).

Contralto and Male Quartet—Sophie Braslan, "Old Folks at Home" (Forster) (Columbia Record 04215).

8.47: Recital—Mr. Carl Moller, "Isaacstein at Wembley" (Hayman).

8.53: Band and Chorus—Kit-Cat Band, "Hit The Deck" (Youmans): vocal medley (Columbia Record 02621).

8.57: Weather report and announcements.

9.0: Selection—Band "Maritana" (Wallace).

9.12: Soprano solo—Miss Eva Scott "Flowers of the Forest" (Ancient).

9.17: Intermezzo—Band, "The Crown of Love" (Tipping).

9.27: Recitals—Mr. Carl Moller, (a) "Pacific Coast" (Smith); (b) "The New Recruit" (Anon.).

9.35: Selection—Band, selected hymn tunes.

9.47: Bass solo—Mr. Neil Black, "Oh, To Be a Gipsy" (Foster).

9.53: March—Band, "Mount Hobson" (Sutton).

9.58: Chorus and Band—Kit-Cat Band, "Hit the Deck" (vocal medley) (Youmans) (Columbia Record 02621).

10.2: Close down.

Wednesday, May 1

1YA, AUCKLAND (333 METRES).—WEDNESDAY, MAY 1.

3 p.m.: Afternoon session—selected studio items.

4.0: Literary selection by the Announcer.

4.8: Studio items.

4.25: Sports results to hand.

4.30: Close down.

6.0: Children's session, conducted by Uncle Tom.

7.15: News session.

7.30: Market reports.

8.0: Chimes.

8.1: Overture—H.M. Coldstream Guards Band, "Poet and Peasant" (Suppe) (H.M.V. Record C1315).

8.9: Vocal quartet—Madame Mary Towsey's Quartet, "The Lass with the Delicate Air" (arrgd. West).

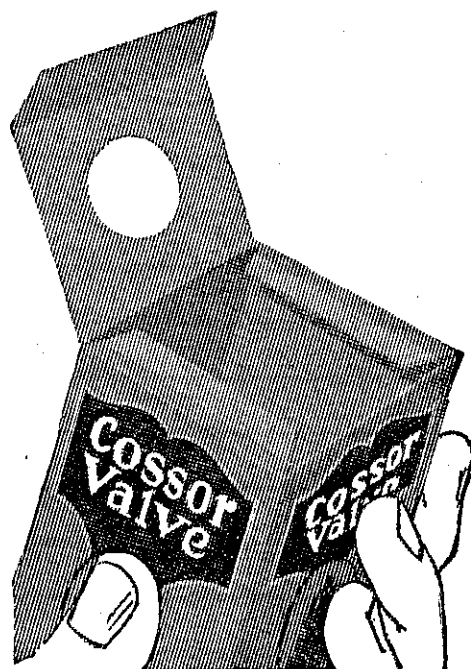
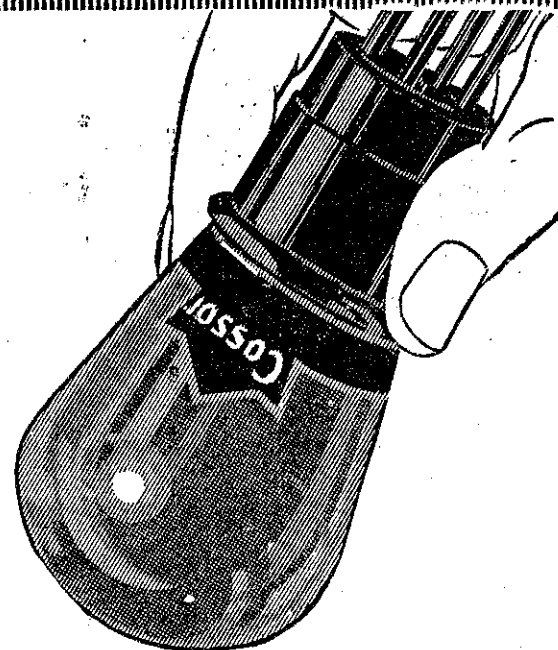
8.13: Baritone solos—Mr. John Bree, (a) "Nina" (Pergolesi); (b) "Lady Mine" (Lohr).

8.20: Recitals to pianoforte accompaniment—Mrs. Culford Bell, (a) "The House by the Side of the Road" (Foss); "Little High Chair" (Benton).

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- 8.27: Soprano solo—Madame Mary Towsey, "To the Forest" (Tschai-kovsky).
 8.31: Novelty—The Asquiths, thirty minutes drawing-room entertainment.
 9.1: Weather report.
 9.3: Tenor solo—Mr. J. McDougall, "Macushla" (McMurrough).
 9.6: Pianoforte solo—Mr. Cyril Towsey, "Funeral March from Sonata in B Flat Minor" (Chopin).
 9.10: Selection—National Military Band, "Weymouth Chimes" (arrgd. Hare) (Zonophone Record 5119).
 9.13: Vocal quartet—Madame M. Towsey's Quartet, "Parting" (Mendelssohn).
 9.16: Contralto solo—Miss E. Peace, "Hindoo Song" (Bemberg).
 9.19: Recitals—Mrs. Culford Bell, two French-Canadian poems, (a) "Lettie Bateese" (Drummond); (b) "Wreck of the Julie Plante" (Drummond).
 9.25: Vocal duet—Messrs. Bree and McDougall, "The Army and Navy" (Russell).
 9.29: Pianoforte solo—Mr. C. Towsey, "Study" (Chopin).
 9.32: Soprano solo—Miss B. B. Barker, "Ouvre tes Yeux Bleus" (Open thy blue eyes) (Massenet).
 9.35: Vocal quartet—Madame Mary Towsey's Quartet, "Come to the Fair" (Easthope Martin).
 9.38: Presentation of the opera "Rigoletto" (Verdi) fourth instalment (Libretto by Mr. Karl Atkinson) (H.M.V. Record 1493/7):—
 (Synopsis: The scene of the plot is the court of the Duke of Mantua, a Don Juan against whose attentions no woman is safe. He is indebted for help in his schemes to his jester, Rigoletto. The courtiers have much reason to hate both Duke and jester, and plan revenge on Rigoletto. The courtiers, resorting to a ruse by which they secure the help of Rigoletto, he, not realising that his own daughter is the victim, abduct Gilda, and carry her off to the palace. Rigoletto rushes to the palace. His daughter is with the Duke. In distress, he attempts to get into the room. The courtiers, who hate him, and do not altogether understand what is happening, prevent his doing so. At last the daughter, released, dashes out. Rigoletto swears vengeance on the Duke.

The last act of the opera will be presented this evening. The scene is a house in a by-street. Rigoletto engages the assassin, Sparafucile, to kill the first person who comes, whoever this may be. He entices the Duke to the house, using Sparafucile's sister, Maddelena, as the attraction. Gilda hears, and though wronged by the Duke, makes up her mind to give her life to save him. Putting herself in the Duke's place, she causes Sparafucile to stab her. Rigoletto enters to receive the Duke's body in a sack. To his astonishment and horror, he hears the Duke singing in the room above. He opens the sack—and finds—his daughter!

Close down.

(Note: Owing to the Municipal elections, the results of which will be announced, the above programme is subject to alteration.)

2YA, WELLINGTON (420 METRES)—WEDNESDAY, MAY 1.

8.0 p.m.: Results of the Municipal Elections.

3YA, CHRISTCHURCH (306 METRES)—WEDNESDAY, MAY 1.

3 p.m. Afternoon session—selected gramophone items.

- 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session, conducted by "Mother Hubbard."
 7.15: News session.
 7.30: Addington stock market reports.
 8.0: Chimes.
 Progress reports of polling results and speeches of candidates at the Municipal Election will be broadcast by relay from time to time during this evening's programme.
 8.1: Instrumental quintets—Bohemian Quintet, (a) "Rienzi" Overture (Wagner); (b) "Scarf Dance" (Delibes).
 8.9: Vocal quartet—Dulcet Quartet, "Come to the Fair" (Easthope Martin).
 8.13: Pianoforte and song recital by Miss Edith Harry, pianiste-singer-composer: Pianoforte, (a) "Nocturne in F Sharp" (Chopin); (b) "Musical Box" (Liddow). Songs: (a) "Boat Reverie" (Harry); (b) "Mary Magdalene" (Harry).
 8.25: Baritone solo—Mr. A. G. Thompson, "Winter Lightning" (A. G. Thompson).
 8.29: Weather report.
 8.33: Instrumental quintets—Bohemian Quintet, (a) "Valse Triste" (Sibelius); (b) "Gavotte" (Rameau).
 8.41: Tenor and baritone duet—Dulcimo Duo, "In this Solemn Hour" (Verdi).
 8.46: Pianoforte and song recital—Miss Edith Harry. Pianoforte: (a) "Melodie in E" (Rachmaninoff); (b) "Etude in A Minor" (MacDowell). Songs: (a) "Achel by the Sea" (Lawrence); (b) "Bells Across the Moor" (Harry); (c) "Colette" (Harry).
 8.58: Baritone solos—Mr. A. G. Thompson, (a) "An Ideal" (A. G. Thompson); (b) "Gather Ye Rosebuds" (A. G. Thompson).
 9.4: Vocal duet—Dulcet Duo, "Nile Waters" (Lohr).
 9.8: Duet for two violins—Misses F. Millar and Irene Morris, "Lento and Moderato" (Moszkowski).

- 9.16: Tenor solos—Mr. T. G. Rogers, "Fly Away, Nightingale" (Rubinstein).
 9.20: Vocal quartet—Dulcet Quartet, "Soldiers' Chorus" ("Faust") (Gounod).
 Close down.
 (Note: Owing to the Municipal elections, the results of which will be announced, the above programme is subject to alteration.)

4YA, DUNEDIN (463 METRES)—WEDNESDAY, MAY 1.

- 7.0 p.m.: Town Hall chimes.
 7.1: Request gramophone recital.
 7.40: News session.
 8.0: Town Hall chimes.
 8.1: March—H.M. Coldstream Guards, "Colonel Bogey" (Alford) (H.M.V. Record B2408).
 8.5: Quartet—The Serenaders, "There Was a Jolly Miller."
 8.9: Dunedin Banjo Trio, (a) "Put Your Arms Where They Belong" (Ackman); (b) "Hallelujah" (Youmans).
 8.17: Soprano solo—Miss Florence Sumner, "Whither" (Powell).
 8.21: Orchestral—Royal Opera Orchestra, (a) "Sylvia Ballet—The Huntresses"; (b) "Sylvia Ballet—Intermezzo" (Delibes) (H.M.V. Record C1417).
 8.29: Tenor solo—Mr. W. Harrison, "When Shadows Gather" (Marshall).
 8.33: Humorous sketch—Miss Anita Winkel, and Major F. H. Lampen.
 8.39: Orchestral—Victor Concert Orchestra, "In A Monastery Garden" (Kefelby) (Zonophone Record EF7).
 8.43: Contralto solo—Miss Dorothy Allan, "Far Across the Desert Sands" (Finden).
 8.47: Dunedin Banjo Trio, "That's My Weakness Now" (Steph).
 8.51: Baritone solos—Mr. R. B. Macdonald, (a) "Stone Cracker John" (Coates); (b) "The Star" (Rogers).
 8.59: Chorus—D'Oyly Carte Opera Company, (a) "O, Rapture, When Alone Together"; (b) "There Was a Time"; (c) "From the Sunny Spanish Shore"; (d) "In Enterprise of Martial Kind."
 9.7: Weather report.
 9.9: Quartet—The Serenaders, "Drink to Me Only."
 9.13: Dunedin Banjo Trio, "Jeanine" (Shilkret).
 9.18: Soprano solo—Miss F. Sumner, "When Spring Comes To The Islands" (Lohr).
 9.22: Waltz—Eddie Thomas' Collegians, "Moonlight on the Danube" (Gay) (Columbia Record 01135).
 9.25: Tenor solos—Mr. W. Harrison, (a) "Melisande in the Woods" (Goetz); (b) "I'm Hoping You Remember" (Clarke).
 9.32: Humorous sketch—Miss Anita Winkel and Major F. H. Lampen.
 9.38: Xylophone solo—Rudy Starita, "Dancing Tambourine" (Polla) (Regal Record G20305).
 Male quartet—Goodrich Silvertown Quartet, "Who's Blue Now?" (Meyer) (Columbia Record 01192).
 Piccolo duet—Jean and Pierre Gennin, "Rippling Streams" (Gennin) (Columbia Record 02575).
 9.47: Contralto solo—Miss Dorothy Allan, "O Peaceful England" (German).
 9.51: Dunedin Banjo Trio—(a) "Sonny Boy" (Henderson); (b) "Back In Your Own Back Yard" (Dryer).
 9.59: Baritone solo—Mr. R. B. MacDonald, "Riderless Steed" (Hussell).
 10.2: Piano solo—Gil Dech, "Sometimes I'm Happy" (Youmans) (Columbia Record 01205).
 10.5: Quartet—The Serenaders, "Begone Dull Care."
 10.8: His Master's Voice Dance Programme:
 Orchestral—Symphony Orchestra, (a) "La Vida Breve" (Spanish Dance) (De Falla); (b) "L'Amour Sorcier" (Love the Magician) (De Falla) (H.M.V. Record D1453).
 Male Quartet with piano—The Revellers, "Oh, Lucindy" (Hollingsworth) (H.M.V. Record EA430).
 Foxtrot with vocal refrain—International Orchestra, "Shine On, Harvest Moon" (Norworth) (H.M.V. Record EA407).
 Waltz with vocal refrain—The Troubadours, "Some Day, Somewhere" (Pollack) (H.M.V. Record EA421).
 10.25: Male Quartet with piano—National Cavaliers, "Beautiful" (Gillespie) (H.M.V. Record EA430).
 Foxtrot with vocal refrain—Hamps' Kentucky Serenaders, "Blue Grass" (De Sylva) (H.M.V. Record EA407).
 Foxtrot—Geo. Olsen and His Music, "Who?" (Harbach) (H.M.V. Record EA79).
 Waltz with vocal refrain—The Troubadours, "Neapolitan Nights" (Kerr) (H.M.V. Record EA421).
 10.38: Tenor with Orchestra—Jno. McCormack, "The Far Away Bells" (Gordon) (H.M.V. Record DA914).
 Waltz—Hilo Orchestra, "Lou'siana Lullaby" (Zoeller) (H.M.V. Record EA374).
 Hawaiian Orchestra—Hilo Hawaiian Orchestra, "Hawaiian Nights" (Roberts) (H.M.V. Record EA310).
 Foxtrot—Hilo Orchestra, "My Bird of Paradise" (Berlin) (H.M.V. Record EA374).
 Violin with kinema organ—Elsie Southgate, "I Hear You Calling Me" (Marshall) (Zonophone Record 5109).
 Foxtrot—Statler's Pennsylvanians, "Happy-Go-Lucky Lane" (Lewis) (H.M.V. Record EA353).
 Foxtrot—Geo. Olsen and His Music, "Sunny" (Harbach). (H.M.V. Record EA79).
 11.0: Close down.
 (Note: Owing to the Municipal elections, the results of which will be announced, the above programme is subject to alteration.)

Thursday, May 2

1YA, AUCKLAND (333 METRES)—THURSDAY, MAY 2.

- 3.0 p.m.: Afternoon session—selected studio items.
 3.30: Talk—Miss Edith Sutherland, "Home Handicrafts."
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 6.0: Children's session, conducted by Peter Pan.
 7.15: News session.
 7.30: Talk—Mr. N. M. Richmond, B.A. (Director of the W.E.A.), "The Farmer's Place in the Economic System."
 7.45: Market reports.
 8.0: Chimes.
 Novelty Evening—"A NIGHT OF CONVIVIALITIES."
 9.40: "His Master's Voice" Dance Programme.
 Overture—Marek Weber's Orchestra, "Vienna by Night" (Komzak) (H.M.V. record C1507).
 Foxtrot—Horace Heidt's Orchestra, "Golden Gate" (Jolson) (H.M.V. record EA359).
 Foxtrot—Art Hickman's Orchestra, "Dream House" (Foxe) (H.M.V. record EA434).
 Foxtrot with vocal chorus—Horace Heidt's Orchestra, "What a Wonderful Wedding" (Kahal) (H.M.V. record EA359).
 9.58: Tenor solo—Jno. McCormack, "I Hear You Calling Me" (Marshall) (H.M.V. record EA958).
 Foxtrot—Victor Arden and Phil Ohman's Orchestra, "Kiddie Kapers" (Shilkret) (H.M.V. record EA401).
 Pipe organ, piano, trombone and harp, Shilkret's Rhythm Melodists, "When You're with Somebody Else" (Gilbert) (H.M.V. record EA336).
 Foxtrot—Victor Arden and Phil Ohman's Orchestra, "Rag Doll" (Brown) (H.M.V. record EA401).
 10.11: Humour—Norman Long, "Good Little Boy and Bad Little Boy" (Weston) (H.M.V. record B2454).
 Guitars and ukulele—Kane's Hawaiians, (a) "Drowsy Waters" (Allan); (b) "Hilo Hawaiian March" (Zonophone 2992).
 Foxtrot—Rhythmic Eight, "So Tired" (Little) (Zonophone EE104).
 10.21: Tenor solo—Maurice Gunsby, "With All Her Faults I Love Her Still" (Rosenfeld) (Zonophone EE87).
 Wurlitzer organ solo—Jesse Crawford, "Dancing Tambourine" (Ponce) (H.M.V. record EA301).
 Baritone solo—Baritone solo—Maurice Elwin, "Just Give the Southland to Me" (Sissle) (Zonophone EE117).
 10.31: Humour—Jno. Henry and Blossom, "Joe Murgatroyd says" (Henry) (H.M.V. record B2120).
 Foxtrot—Troubadours, "Dream Kisses" (Yellen) (H.M.V. record EA269).
 Foxtrot—Jack Hylton's Orchestra, "Souvenirs" (Nicholls) (H.M.V. EA297).
 Waltz—International Novelty Quartet, "Cuckoo" (Jonasson) (Zonophone EE67).
 10.44: Hawaiian—Hilo Hawaiian Orchestra, "Hawaiian Sunset" (Vanderstoot) (H.M.V. record B2528).
 Yale Blues—Rio Grande Band, "Every Little Thing I Do" (Hackforth) (H.M.V. record EA297).
 Hawaiian—Hilo Hawaiian Orchestra, "Sweet Hawaiian Dream" (Coleman) (H.M.V. record B2328).
 10.54: Male voices—The Revellers, "The Varsity Drag" (de Sylva) (H.M.V. record EA332).
 Tenor with cinema organ—Gerald Griffin, "At the End of an Irish Moonbeam" (Golden) (Zonophone record 2989).
 11.0: Close down.

2YA, WELLINGTON (420 METRES)—THURSDAY, MAY 2.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Special programme of Mastertouch Player rolls and selected "H.M.V." records arranged by Messrs. Hamilton Nimmo and Sons, Ltd. All player rolls will be played on the "Gulbransen" Registering Piano by Mr. A. J. Nimmo.
 4.30 and 4.55: Sports results to hand.
 5.0: Children's session conducted by Uncle George.
 6.0: Dinner session:
 Band selection—H.M. Coldstream Guards, "Bells of St. Malo" (Rimmer) (H.M.V. Record B2647).
 Band selection—H.M. Coldstream Guards, "Semper Fidelis" (Sousa) (H.M.V. Record B2647).
 Violin solo—Erica Morini, "Romanza Andaluza" (Sarasate) (H.M.V. Record D1445).
 6.10: Tacet.
 6.15: Violin solo—Erica Morini, "Introduction and Tarantelle" (Sarasate) (H.M.V. Record D1445).
 Orchestral—Chicago Symphony Orchestra, "Valse Triste" (Sibelius) (H.M.V. Record ED5).
 Orchestral—San Francisco Symphony Orchestra, "Funeral March of a Marionette" (Gounod) (H.M.V. Record ED5).
 6.27: Tacet.
 6.30: Orchestral—Paul Whiteman's Concert Orchestra, "Suite of Serenades" (Herbert): (1) Spanish; (2) Chinese; (3) Cuban; (4) Oriental (H.M.V. Record EB26).
 6.38: Tacet.

- 6.45: Band selection—H.M. Coldstream Guards, "Suite Francaise" (Foulds) (H.M.V. Records B2751-2).
 6.57: Tacet.
 7.0: News session, market reports and sports results.
 7.34: Lecturette—Mr. J. W. Fergie, Publicity Branch of N.Z. Railways, "Excursions by Rail."
 7.40: Lecturette—Miss Margaret O'Connor, "Dancing."
 8.0: Chimes of the G.P.O. clock.
 8.1: Soprano solo—Frieda Hempel, "None but the Weary Heart" (Tschalkowsky) (H.M.V. Record C1079).
 8.8: Tenor solo—Enrico Caruso, "Pimpinella" (Florentine Song) (Tschalkowsky) (H.M.V. Record C1169).
 8.15: Relay from Concert Chamber, Wellington Town Hall, of first concert of the 1929 season of the Wellington Symphony Orchestra under the conductorship of Mr. Leon de Mauny. (The items will comprise compositions of the famous Russian composer Tschalkowsky.)
 Instrumental—Wellington Symphony Orchestra, "Capriccio Italienne" (Tschalkowsky).
 Symphony—Wellington Symphony Orchestra, "Symphony in B Minor, No. 6" ("Pathetique") (Tschalkowsky).
 'Cello solo—Mr. Claude Tanner, "Variations on a Rococo Theme" (accompanist, Madame Evelyn de Mauny).
 Suite—Wellington Symphony Orchestra, "Casse Noisette" (Nutcracker Suite) (Tschalkowsky): (1) Overture Miniature; (2) Danse Arabe; (3) Danse Russe (Trepak); (4) Marche; (5) Danse Chinoise; (6) Danse de Marlifons; (7) Valse des Fleurs.
 Overture—Wellington Symphony Orchestra, "1812" (Tschalkowsky).
 National Anthem.
 Close down.

3YA, CHRISTCHURCH (306 METRES)—THURSDAY, MAY 2.

- 3.0 p.m.: Afternoon session—selected gramophone items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session, conducted by Uncle John.
 7.15: News session.
 7.30: Talk by Professor H. G. Denham (under the auspices of the Canterbury Progress League).
 8.0: Chimes.
 8.1: Overture—Berlin State Opera Orchestra, "The Mastersingers of Nuremberg" (Wagner) (H.M.V. record D1260).
 8.9: Soprano and tenor duet—Grand Opera Duo, "Go, Pretty Rose" (Marzials).
 8.13: 'Cello solo—Mr. Harold Beck, "Chant D'Amour" (Casella).
 8.17: Mezzo-soprano solo—Miss Myra Pollard, "Pleading" (Elgar).
 8.21: Pianoforte solo—Miss Dorothy Davies, "Italian Concerto—1st Movement" (Bach).
 8.25: Bass solo—Mr. James Filler, "The Desert" (Emanuel).
 8.29: Monologue—Milton Hayes, "The Meanderings of Monty—Is Lipstick Nourishing?" (Hayes) (Columbia record 01293).
 8.36: Instrumental trio—Christchurch Broadcasting Trio, "Allegro Energico" (from "Trio in C Minor") (Mendelssohn).
 8.48: Vocal quartette—Grand Opera Quartet, "London Town" (German).
 8.52: Soprano solo—Madame Gower Burns, "The Little Fish's Song" (Arensky).
 8.56: Orchestral—San Francisco Symphony Orchestra, "Coppelia Ballet" (Delibes) (H.M.V. record D1272).
 9.0: Weather report.
 9.5: Overture—Royal Opera Orchestra, "Sylvia Ballet—Pizzicato and Procession of Bacchus" (Delibes) (H.M.V. record C1418).
 9.13: Soprano and mezzo-soprano duet—Grand Opera Duo, "Down" (Ireland).
 9.17: Tenor solos—Mr. Ernest Rogers, (a) "For You Alone" (Geehl); (b) "Trusting Eyes" (Gartner).
 9.23: 'Cello solo—Mr. Harold Beck, "Air in Olden Style" (Cesar Franck).
 9.27: Bass solo—Mr. James Filler, "Bosom of the Deep" (Noel Johnson).
 9.31: Pianoforte solo—Miss Dorothy Davies, "Toccata in A" (Paradies-Beal).
 9.35: Mezzo-soprano solo—Miss Myra Pollard, "Boat Song" (Ware).
 9.39: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cantabile" (Cesar Franck); (b) "Gavotte" (Le Clair).
 9.47: Soprano solos—Madame Gower Burns, (a) "Cradle Song" (Jarnfeldt); (b) "A Fancy" (Galbraith).
 9.53: Vocal quartette—Grand Opera Quartet, "Fly, Singing Bird, Fly" (Elgar).
 9.57: Orchestral—Philadelphia Symphony Orchestra, "Hungarian Rhapsody No. 2" (Liszt) (H.M.V. record D1296).
 10.5: Close down.

4YA, DUNEDIN (463 METRES)—THURSDAY, MAY 2.

SILENT DAY.

Friday, May 3

1YA, AUCKLAND (333 METRES)—FRIDAY, MAY 3.

- 3 p.m. Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 4.30: Close down.

- 6.0: Children's session conducted by Nod and Aunt Jean.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Overture—Berlin State Opera Orchestra, "The Mastersingers of Nuremberg" (Wagner) (H.M.V. Record D1260).
 8.9: Vocal quartet—Clarion Quartet, "Traumerei" (Schumann).
 8.18: Instrumental trio—Studio Trio, "Theme with Variations" from "Septet" (Beethoven).
 8.23: Soprano solo—Miss Alma McGruer, "Who is Sylvia?" (Schubert).
 8.27: Waltz—International Novelty Orchestra, "Emperor" (Strauss) (Zonophone Record EF22).
 8.31: Vocal duet—Miss B. Smith and Mr. D. Black, "Rosaleen" (Arundale).
 8.35: Organ and vocal—Mr. Arthur E. Wilson and Mrs. J. Litherland, (a) "Prelude and Fugue in G Minor" (Bach); (b) "Gavotte in B Flat" (Handel); (c) soprano aria, "My Heart was Ever Faithful" (Novello); (d) "Trumpet Tune and Air" (Purcell).
 8.55: Tenor solo—Mr. James Simpson, "Angels Guard Thee" (Godard).
 8.59: Weather report.
 9.2: Orchestral—New Light Symphony Orchestra, (a) "Persiflage" (Francis) (H.M.V. Record B2754); (b) "Scene de Ballet Marionettes" (Glazounov).
 9.8: Contralto solo, Miss B. Smith, "Music When Soft Voices Die" (Besley).
 9.12: Pianoforte solos—Mr. Eric Waters, (a) "Tristesse de Columbine" (Schutt); (b) "Valse in A Flat Major" (Waters).
 9.17: Bass solo—Mr. Duncan Black, "Time to Go" (Sanderson).
 9.21: Organ and vocal—Mr. A. E. Wilson and Mrs. J. Litherland, (a) "Humoresque" (Dvorak); (b) "Brise d'Ete" (Sanderson); (c) soprano solo (selected); (d) "Nuptial Postlude" (Faulks).
 9.41: Vocal duet—Miss McGruer and Mr. Simpson, "Marcheta" (Schertzinger).
 9.45: Instrumental trio—Studio Trio, "Rondo Alla Russe" (Trio, Op. 96—Hummel).
 9.54: Vocal quartet—Clarion Quartet, "In the Rain" (Parks).
 10.0: Close down.

2YA, WELLINGTON (420 METRES)—FRIDAY, MAY 3.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 3.40: Relay from Messrs. Kirkcaldie and Stains' Tea Rooms of music by the Trio.
 4.0: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Children's session conducted by Big Brother Jack.
 6.0: Dinner session:
 Orchestral—Bournemouth Municipal Orchestra, "Pique Dame" (Suppe) (Columbia Record 92730).
 Orchestral—San Francisco Symphony Orchestra, "Caprice Viennois" (Kreiser) (H.M.V. Record D1272).
 6.12: Tacet.
 6.15: Violin solos—Fritz Kreisler, (a) "Indian Love Call" (Friml), (b) "Deep in My Heart, Dear" (Romberg) (H.M.V. Record DA785).
 Orchestral—Philadelphia Symphony Orchestra, "Rakoczy March" (Berlioz) (H.M.V. Record ED7).
 6.25: Tacet.
 9.30: Orchestral—Philadelphia Symphony Orchestra, "Samson and Delilah—Bacchanale" (Saint-Saens) (H.M.V. Record ED7).
 Grand organ and cornet—Arnold Grier, "Softly Awakes My Heart" (Saint-Saens) (Zonophone Record A809).
 Orchestral—San Francisco Symphony Orchestra, "Coppelia Ballet" (Delibes) (H.M.V. Record D1272).
 6.41: Tacet.
 6.45: Orchestral—Victor Symphony Orchestra, "Dance of the Hours" (Ponchielli) (Zonophone Record EF12).
 6.53: Tacet.
 7.0: News session, market reports and sports results.
 7.40: Lecturette—Mr. D. McKenzie, "The Laws of Rugby."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—Orchestra, "Martha" (Flotow).
 8.9: Soprano solo—Miss Ena Rapley, "Musetta's Song" ("La Boheme") Puccini).
 8.13: Violin solo—Renee Chemet, "Serenade" (Toselli) (H.M.V. Record DA955).
 8.16: Baritone solo—Mr. Arthur Brady, "A Jovial Monk am I" ("La Poupee") (Andran).
 8.20: Suite—Orchestra, "Scheherazade" (Rimsky-Korsakov), Second Movement (The Story of the Kalendar Prince).
 8.33: Vocal duet—Miss Madge Freeman and Mr. Edwin Dennis, "I Love You" ("Mercenary Mary").
 8.37: Comedian—Frank Crumit, "The Three Trees" (McNaughton) (H.M.V. Record EA387).
 8.40: Tenor solo—Mr. Edwin Dennis, "Che Gelida Manina" ("La Boheme"—Puccini).
 8.44: Flute solo—John Amao, "Flute Concerto—Finale" (Mozart) (H.M.V. Record C1533).
 8.48: Contralto solo—Miss Madge Freeman, "Come to the Ball" ("The Quaker Girl"—Monckton).
 8.52: Selection—Orchestra, "La Traviata" (Verdi).
 9.1: Weather report.
 9.3: Mr. Victor S. Lloyd will relate another experience.
 9.15: Song suite—Orchestra, "Pagoda of Flowers" (Woodforde-Finden).

- 9.25: Vocal quartet—Philharmonic Quartet, "Regular Royal Queen" ("The Gondoliers"—Sullivan).
 9.29: Selection—Orchestra, "Chu Chin Chow" (Norton).
 9.39: Vocal duet—Misses Ena Rapley and Madge Freeman, "Vale" Russell).
 9.43: Presentation of the opera "Rigoletto" (Verdi), Fourth Instalment (H.M.V. Records C1493-7).
 (Synopsis: The scene of the plot is the Court of the Duke of Mantua, a Don Juan against whose attentions no woman is safe. He is indebted for help in his schemes to his jester, Rigoletto. The courtiers have much reason to hate both Duke and Jester, and plan revenge on Rigoletto. The courtiers, resorting to a ruse by which they secure the help of Rigoletto, he not realising that his own daughter is the victim, abduct Gilda and carry her off to the palace. Rigoletto rushes to the palace. His daughter is with the Duke. In distress he attempts to get into the room. The courtiers, who hate him and do not altogether understand what is happening, prevent his doing so. At last the daughter, released, dashes out. Rigoletto swears vengeance on the Duke. The last act of the opera will be presented this evening. The scene is a house in a by street. Rigoletto engages his assassin, Sparafucile, to kill the first person who comes, whoever this may be. He entices the Duke to the house, using Sparafucile's sister, Maddalena, as the attraction. Gilda hears, and, though wronged by the Duke, makes up her mind to give her life to save him. Putting herself in the Duke's place, she causes Sparafucile to stab her. Rigoletto enters to receive the Duke's body in a sack. To his astonishment and horror he hears the Duke singing in a room above. He opens the sack and finds—his daughter!)
- 10.25: Close down.

3YA, CHRISTCHURCH (306 METRES)—FRIDAY, MAY 3.

- 3 p.m.: Afternoon session—Selected gramophone items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session conducted by "Storyman."
 7.15: News session.
 8.0: Chimes.
 8.1: Rebroadcast of 2YA, Wellington—Overture, Studio Orchestra, "Martha"—Flotow).
 8.9: Vocal excerpts from "The Maid of the Mountains" (Fraser Simson), presented by the Radiolian Quartet:
 Opening chorus—Radiolians, "Friends Have to Part."
 Bass solo and chorus—Mr. W. J. Richards and chorus—"Live for To-day."
 Soprano solo—Mrs. Claris Shaw, "Love Will Find a Way."
 8.16: Banjo solo—Len Fillis, "Uncanny Banjo" (Fillis) (Columbia Record 990).
 8.19: Rhythmic Duo, in popular melodies.
 8.33: Banjo solo—Len Fillis, "Banjoviality" (Fillis) (Columbia Record 990).
 8.36: Chorus and tenor solo—Radiolians and Mr. Gregory Russell, (a) "We're Gathered Here" (Fraser Simson); (b) "A Bachelor Gay" (Fraser Simson).
 8.45: Dance music—Bailey-Marston Dance Orchestra, (a) "Blue Danube" (Waltz) (Strauss); (b) "Blue Nights" (Rollin).
 8.53: Contralto and bass duet and chorus—Miss M. Russell and Mr. W. J. Richards and Radiolians, (a) "Over There, Over There"; (b) "Save Us" (Fraser Simson).
 9.1: Weather report.
 9.6: Dance music—Bailey-Marston Dance Orchestra, (a) "There Are Eyes" (Keyes); (b) "You're in My Heart" (Nicholls).
 9.14: Soprano and tenor duet—Radiolian Duo, "Friendship and Love" (Fraser Simson).
 Tenor and bass duet—Radiolian Duo, "Dirty Work" (Fraser Simson).
 9.20: Dance music—Bailey-Marston Dance Orchestra, "My Inspiration to You" (Nicholls); (b) "Hello, Montreal" (Warren).
 9.28: Chorus—Radiolians, "Fisher Folk" (Fraser Simson).
 Soprano and baritone duet—Radiola Duo, "A Paradise for Two" (Fraser Simson).
 9.35: Dance music by the Bailey-Marston Dance Orchestra.
 11.0: Close down.

4YA, DUNEDIN (463 METRES)—FRIDAY, MAY 3.

- 3 p.m.: Town Hall chimes.
 3.1: Gramophone items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session conducted by Aunt Sheila and Big Brother Bill.
 7.15: News session.
 7.30: Book review—Mr. H. Greenwood, of the Dunedin Athenaeum.
 8.0: Town Hall chimes.
 8.1: Orchestral—Philadelphia Symphony Orchestra, "Marche Slave" (Tschai-kowsky) (H.M.V. Record D1046).
 8.9: Contralto solos—Miss Irene Hornblow, (a) "Sandyman" (Brahms), (b) "The Arrow and the Song" (Balfe).
 8.16: Instrumental trio—4YA Broadcasting Trio, "Valse from Serenade" (Tschai-kowsky).
 8.22: Baritone solo—Mr. Arthur Lungley, "My Friend" (Behrend).
 8.26: Grand organ solo—Arthur Meale, "Cavatina" (arr. Meale) (H.M.V. Record B2695).
 8.29: Recital—Miss Joyce Hould, "The Kings" (Galsworthy).

- 8.34: Violin solo—Miss Eva Judd, "Romance" from Second Concerto (Wieniawski).
- 8.39: Soprano solos—Mrs. Charles Isaacs, (a) "Danny Boy" (traditional), (b) "Angus McDonald" (Roedel).
- 8.47: Orchestral—Royal Opera Orchestra, "Faust Ballet Music," First and Second Movements (Gounod) (H.M.V. Record C1462).
- 8.51: Tenor solo—John McCormack, "Angel's Serenade" (Braga) (H.M.V. Record DB578).
- 8.55: Pianoforte solo—Mrs. Ernest Drake, "Hexentanz" (McDowell).
- 8.59: Orchestral—Royal Opera Orchestra, "Faust Ballet Music," Third and Fourth Movements (Gounod) (H.M.V. Record C1462).
- 9.3: Weather report.
- 9.5: Presentation of the opera "Rigoletto" (Verdi), Second Instalment (H.M.V. Records D1486-90).
- (Synopsis: The story of the opera is laid at the Court of the Duke of Mantua, a Don Juan against whose attentions no woman is safe. He is indebted for help in his schemes to his jester, Rigoletto. The courtiers have much reason to hate both Duke and Jester. Count Monterone utters a parent's curse upon Duke and Jester. The Duke is merely amused, but the Jester is terrified. The courtiers plan revenge on Rigoletto. The portion of the opera dealt with this evening deals with the carrying out of the plan of revenge. Intimidated by the curse, Rigoletto makes a compact with an assassin, Sparafucile, whose help is henceforth to be his in case of need. Rigoletto now goes into the garden, where he finds his only daughter, Gilda. She conceals from him the fact that a young man is hidden on the premises. The young man) though she does not know it) is the Duke. The courtiers, resorting to a ruse whereby they secure the help of Rigoletto, he not realising that his own daughter was the victim, abducts Gilda and carry her off to the palace. Rigoletto discovers what has happened, and with horror recalls the curse.)
- Prominent among the airs to be sung will be the great love duet "Love is the Sun" and the famous solo "Caro Nome" (Dearest Name).
- 9.38: Instrumental trio—4YA Broadcasting Trio, "Reve Angelique" (Rubinstein).
- 9.43: Contralto solo—Miss Irene Horniblow, "The Oak and the Ash" (Old English).
- 9.47: Recital—Miss Joyce Hould, "The Rider at the Gate" (Masefield).
- 9.51: Baritone solo—Mr. Arthur Lungley, "What Am I, Love?" (Adams).
- 9.55: Cello solo—Mr. P. J. Palmer, "Le Cygne" (Saint-Saens).
- 9.59: Soprano solo—Mrs. Charles Isaacs, "There's a Land" (Allitsen).
- 10.3: Orchestral—Royal Opera Orchestra, "Faust Ballet Music," Fifth, Sixth, and Seventh Movements (Gounod) (H.M.V. Record C1462).
- 10.11: Close down.

Saturday, May 4

1YA, AUCKLAND (333 METRES)—SATURDAY, MAY 4.

- 3.0 p.m.: Relay description of Rugby football match, from Eden Park.
- 4.30: Close down.
- 6.0: Children's session conducted by Cinderella.
- 7.14: News session.
- 8.0: Chimes.
- 8.1: Overture—Orchestra, "Morning, Noon and Night" (Suppe).
- 8.11: Novelty—Bohemian Duo, (a) "In the Evening" (Handley); (b) "A Grand and Glorious Feeling" (Ager).
- 8.19: Hawaiian selections—Ingall's Hawaiian Orchestra, (a) "Hawaiian Memories" (Heagney); (b) guitar solo, "Goodbye" (Tosti).
- 8.27: Soprano solos—Miss Thelma James, (a) "There's a Little Maori Whare" (Lawrence); (b) "High Up on a Hill Top" (Baer).
- 8.35: Cello solo with orchestral accompaniment—Miss Molly Wright, "Melodie Arabe" (Glazounov).
- Orchestral—Orchestra, "Village Dance" (Glazounov).
- Cornet solo with orchestral accompaniment, Mr. Phil Mohr, "The Trumpeter" (Dix).
- 8.49: Recital—Messrs. Tom Harris and Jack Mackie, scene from "The Merchant of Venice" (Shakespeare).
- 8.55: Hawaiian selections—Ingall's Hawaiian Orchestra, (a) "Hawaiian Moonlight" (Roberts); (b) "Song of Hawaii" (Corbett).
- 9.3: Weather report.
- 9.6: Selection—Orchestra, "The Waltz Dream" (Strauss).
- 9.16: Novelty—Bohemian Duo, (a) "The World is Waiting for the Sunrise" (Lockhart); (b) "A Little Music in the Moonlight" (Brown).
- 9.24: Baritone solo—Lawrence Tibbett, "Drink To Me Only With Thine Eyes" (Calcott) (H.M.V. Record DA886).
- 9.27: Soprano solos—Miss T. James, (a) "Beautiful" (Shay); (b) "Evening Star" (Turk).
- 9.35: Hawaiian selections—Ingall's Hawaiian Orchestra, (a) "Songs of Hawaii" (MS); (b) "Director March" (MS).
- 9.43: Humour—The Hebrew Two, "Happy Abe and Dismal Ike."
- 9.53: Waltz—Orchestra—"Danube Waves" (Ivanovici).
- March—Orchestra, "Rakoczy" (Czernak).
- 10.0: "Columbia" Dance Programme:
- March medley—H.M. Grenadier Guards, "Martial Moments" (Arrgd. Winter) (Columbia 9065).
- Foxtrot—Park Central Hotel Orchestra, "Golden Gate" (Jolson) (Columbia 01350).

- Foxtrot—Ambassadors' Band, "Forty Seven Ginger-Headed Sailors" (Sarony) (Columbia 01339).
- 9.43: Tenor solo—Seamus O'Doherty, "The Pride of Tipperary" (Lockhead) (Regal G20343).
- Band selection—H.M. Grenadier Guards, "In a Clock Store" (Orth) (Columbia 9029).
- 9.50: Foxtrot—Ambassadors' Band, "I Just Roll Along Having My Ups and Downs" (Trent) (Columbia 01338).
- Foxtrot—Ipana Troubadours, "S Wonderful" (Gershwin) (Columbia 01306).
- Hawaiian guitar, banjo and ukulele trio—"My Hawaii" (Lewis) (Columbia 3806).
- 10.0: Monologue—Milton Hayes, "Meanderings of Monty" (Monty attends a Board Meeting) (Hayes) (Columbia 01106).
- Male quintet—Singing Symphonies, "My Ohio Home" (Kahn) (Columbia 01088).
- Organ solos—G. T. Pattman, (a) "Polly" (Zamecnik); (b) "Janette" (Williams) (Columbia 01144).
- Foxtrot—Debroy Somers' Band, "Without You, Sweetheart" (de Sylva) (Columbia 01249).
- 10.20: Tenor solo—Hubert Elsdell, "Parted" (Tosti) (Columbia 02598).
- Humoresque—Australian Commonwealth Band, "Slidin' Thro' the Rye" (Hawkins) (Columbia 01235).
- 10.32: Male quartet—Shannon Male Quartet, "The Sidewalks of New York" (Lawlor) (Regal G20298).
- Pianoforte solo—Gil Dech, "Hallelujah" (Youmans) (Columbia 01205).
- Vocal with novelty accompaniment—Ukulele Ike, "Ohlquita" (Wayne), (Columbia 01265).
- Vocal duet—Jack Lumsdaine and Len Maurice, "That's My Mammy" (Perse) (Columbia 01191).
- 10.45: Orchestral—Columbia Symphony Orchestra, "March of the Toys" (Herbert) (Columbia 02651).
- Foxtrot—La Nuovo Orchestra, "Di Napoli" (Romani) (Columbia 3066).
- Waltz—Eddie Thomas' Collegians, "Beautiful Ohio" (Earl) (Columbia 02651).
- Male chorus—Sheffield Orpheus Choir, "There Is a Tavern in the Town" (Trdtl.) (Columbia 01175).
- 11.0: Close down.
- 2YA, WELLINGTON (420 METRES)—SATURDAY, MAY 4.
- 3 p.m.: Chimes of the G.P.O. clock.
- 3.1: Relay of football match from Athletic Park.
- 4.0: Children's session, conducted by Uncle Toby.
- 6.0: Dinner session:
- Overture—International Concert Orchestra, "Blue Danube" waltz (Strauss) (Zonophone Record EF21).
- Orchestral—New Light Symphony Orchestra, "In a Clock Store" (Orth) (H.M.V. Record C1308).
- Guitar solo—Roy Smeck, "Itchin' Fingers" (Robison) (Zonophone Record EE119).
- 6.11: Tacet.
- 6.15: Saxophone solo—Rudy Wiedoeft, "Rubenola" (Wiedoeft) (Zonophone Record EE119).
- Hawaiian selections—Hilo Hawaiian Orchestra, (a) "Hawaiian Sunset" (Vandersloot); (b) "Sweet Hawaiian Dream" (Coleman) (H.M.V. Record B2328).
- 6.24: Tacet.
- 6.30: Orchestral—New Light Symphony Orchestra, "A Hunt in the Black Forest" (Volker) (H.M.V. Record C1308).
- Violin, cello, and piano—Kreisler, Kreisler and Raucheisen, "Syncopation" (Kreisler) (H.M.V. Record DA961).
- 6.40: Tacet.
- 6.45: Wurlitzer organ solos—Jesse Crawford, (a) "Roses of Yesterday" (Berlin) (H.M.V. Record EA443); (b) "Just a Night for Meditation" (Lewis) (H.M.V. Record BA448).
- Dance Orchestra, Victor Arden and Phil Ohman's Orchestra, "Rag Doll" (Brown) (H.M.V. Record EA401).
- Dance orchestra—Louisiana Sugar-babies, "Persian Rug" (Kahn) (H.M.V. Record EA397).
- 6.57: Tacet.
- 7.0: News session, market reports, and sports results.
- 7.40: Lecturette—Mr. A. E. Wilson, of Tourist Dept. "Tourist and Holiday Resorts."
- 8.0: Chimes of the G.P.O. clock.
- 8.1: Overture—Orchestra, (a) march, "Washington Post" (Sousa); (b) waltz, "Danube Waves" (Ivanovici).
- 8.9: Vocal quartet—Melodie Four, "Riding on a Dream Train" (Lewis).
- 8.13: Steel guitar duo—Messrs. Berthold and Bent, (a) "Just Like a Melody out of the Sky" (Donaldson); (b) "Sleepy Eyes" (trdtl.).
- 8.20: Tenor solo—Mr. Sam Duncan, "Violets" (Wright).
- 8.24: Cornet solo with orchestral accompaniment, "Macushla" (MacMurray).
- March—Orchestra, "The Little Leaden Soldiers" (Pierne).
- 8.32: Humour—Mr. Len Ashton, "The Parson of Puddle."
- 8.39: Marimba orchestra—Rio Marimba Orchestra, "Three O'Clock in the Morning" (Robledo) (Columbia Record 02685).
- 8.43: Vocal quartet—Melodie Four, "Lullaby" (Brahms).
- 8.47: Soprano solo—Gladys Moneriff, "Huguette" ("The Vagabond King") (Friml) (Columbia Record 01302).
- 8.51: Bass solo—Mr. W. W. Marshall, "The Mountains of Mourne" (French and Collinson).

- 8.55: Instrumental—Orchestra, repeat number.
 9.3: Weather report and announcements.
 9.5: Steel guitar duo—Messrs. Berthold and Bent, (a) "Sonny Boy" (Jolson); (b) "Sometime" (Florio).
 9.12: Tenor solo—Mr. Frank Bryant, "The Joy Bird" (Barnes).
 9.16: Novelty—Orchestra and soloists, "Ballad Memories" (selection) (arrgd. Baynes).
 9.26: Humour—Mr. Len Ashton, "That Old Angora Cat" (Stafford).
 9.32: Wurlitzer organ solo—Leslie James, "O Sole Mio" (Di Caupa) (H.M.V. Record B2792).
 Contralto solo—Essie Ackland, "Five Little Piccaninnies" (Anthony) (H.M.V. Record B2769).
 9.38: Baritone solo—Mr. R. S. Allwright, "Sleepy Hollow Tune" (Kountz).
 9.42: Violin and cinema organ—Elsie Southgate, "Rose in the Bud" (Fors-ter) (Zonophone Record 510).
 Solo and chorus—Virginia Perry and chorus—"My Hero" ("The Chocolate Soldier" (Strauss) (Columbia Record 01173).
 9.48: Vocal quartet—Melodie Four, "Drifting and Dreaming" (arrgd. Melodie Four).
 9.52: Instrumental—Orchestra, dance novelties.
 10.0: "His Master's Voice" dance programme.
 March—Philadelphia Symphony Orchestra, "Damnation of Faust—Rakoczy March" (Berlioz) (H.M.V. ED7).
 Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "In My Bou-quet of Memories" (Lewis) (H.M.V. EA362).
 Foxtrot with vocal refrain—Waring's Pennsylvanians, "In the Even-ing" (Hanley) (H.M.V. EA368).
 Waltz—The Troubadours, "When Love Comes Stealing" (Rapee) (H.M.V. EA410).
 10.14: Baritone solo—Lawrence Tibbett, "Drink to Me Only with Thine Eyes" (Calcott) (H.M.V. DA886).
 Waltz—The Troubadours, "A Kiss Before Dawn" (Perkins) (H.M.V. EA410).
 Foxtrot—Paul Whiteman's Orchestra, "My Angel" (Pollack) (H.M.V. Record EA362).
 Foxtrot with vocal refrain—Nat Shilkret's Orchestra, "Get Out and Get Under the Moon" (Tobias) (H.M.V. EA368).
 10.27: Orchestral—Philadelphia Symphony Orchestra, "Samson et Delilah" (Saint-Saens) (H.M.V. ED7).
 Male chorus—The Revellers, "Mammy is Gone" (de Sylva) (H.M.V. EA384).
 Pianoforte solo—Pauline Alpert, "The Doll Dance" (Brown) (Zono-phone EE98).
 Waltz—Firman's Dance Orchestra, "I'm Away from the World" (Clare) (Zonophone 5099).
 Dance orchestra with vocal chorus—Salon Orchestra, "My Blue Heaven" (Whiting) (H.M.V. EB18).
 10.40: Organ solo—Edwin Lemare, "Aloha-oe" (Liliukolani) (Zonophone EE93).
 Male chorus—The Revellers, "Dream River" (Brown) (H.M.V. Re-cord EA384).
 Foxtrot—Firman's Orchestra, "When I Ring Your Front Door Bell" (Lyn) (Zonophone 5099).
 Dance orchestra—New Light Symphony Orchestra, "Just a Memory" (de Sylva) (H.M.V. EB18).
 10.53: Comedian—Sir Harry Lauder, "Just Got Off the Chain" (Lauder) (H.M.V. D1434).
 Waltz with vocal refrain—Geo. Olsen's Music, "King for a Day" (Lewis) (H.M.V. EA429).
 Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "Mississippi Mud" (Barria) (H.M.V. EA429).
 11.0: Close down.

3YA, CHRISTCHURCH (306 METRES)—SATURDAY, MAY 4

- 8 p.m.: Afternoon session—selected studio items.
 2.45: Description of Rugby match at Lancaster Park.
 4.30: Close down.
 6.0: Children's session, conducted by Chuckle and Aunt Pat.
 7.15: News session.
 7.30: Sports results.
 8.0: Chimes.
 8.1: Overture—Rebroadcast of 2YA, Wellington.
 8.9: Novelty songs—Melody Girls, (a) "O Sonny Boy" (Jolson); (b) "My Blue Ridge Mountain Home" (Robison).
 8.16: Violin solo—Miss Irene Morris, "Swing Song" (Barnes).
 8.20: Tenor solo—Mr. Arthur Couch, "Ships of Arcady" (Head).
 8.24: Waltz—Jack Hylton's Orchestra, "Spanish Rose" (Pearson) (H.M.V. Record B5481).
 8.27: Monologue at piano—Miss Doris Webb, "Soliloquy of a Safety Pin" (Floyer).
 8.31: Instrumental trio—Christchurch Broadcasting Trio, "Scherzo from E flat Trio" (Brahms).
 8.39: Soprano solo—Miss Lottie Colville, "Damon" (Max Stange).
 9.43: Recital—Mrs. Beryl Windsor, "The Bushman's Child" (Beryl Windsor) (second prize dramatic poem in recent 2YA Poetry Competition).
 8.50: Baritone solo—Mr. Robt. Samson, "Song of the Toreador" ("Carmen" (Bozet).
 8.54: Waltzes—The Troubadours, (a) "Beautiful Heaven"; (b) "The Swal-low" (H.M.V. Record EA349).
 9.1: Weather report.
 9.6: Popular songs—Melody Girls, (a) "My Little Irish Rose" (Zamecnik); (b) "Here Comes the Springtime" (O'Hagan).

- 9.13: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cantabile" (Widor); (b) "Spanish Dance" (Moszkowski).
 9.21: Tenor solos—Mr. Arthur Couch, (a) "Dream Tryst" (Cadman); (b) "You Gave Me a Gift" (Mal Burns Loughnan).
 9.27: Soprano solos—Miss Lottie Colville, (a) "The Hole in the Fence" (Rus-sell); (b) "The Little Old Garden" (Hewett).
 9.33: Wurlitzer organ solo—Jesse Crawford, "I Loved You Then as I Love You Now" (MacDonald) (H.M.V. Record EA444).
 9.36: Baritone solos—Mr. Robt. Samson, (a) "Good Morning" (Cleaver); (b) "Glorious Devon" (German).
 9.42: Recital—Mrs. Beryl Windsor, "If Life Were a Play" (Ms.).
 9.46: Violin solo—Miss Irene Morris, "Allegretto" (Boccherini—Kreiser).
 9.50: Monologues at piano—Miss Doris Webb (a) "Naughty Words" (Long-staff); (b) "Johnny, Me and You" (Grain).
 9.56: Pipe organ, piano, trombone, and harp—Shilkret's Rhythm Melodists, "When You're With Somebody Else" (Gilbert) (H.M.V. Record EA386).
 10.0: "His Master's Voice" dance programme:
 Foxtrot—Jack Hylton's Orchestra, "Swords and Sabres" (Bennett) (H.M.V. Record B5160).
 Foxtrot with vocal chorus—Rhythmic Eight, "Possibly" (Gibbons) (Zonophone EE97).
 Wurlitzer organ solo—Jesse Crawford, "Jeannine, I Dream of Lilac Time" (Gilbert) (H.M.V. EA425).
 10.9: Baritone solo—Peter Dawson, "Believe Me if All Those Endearing Young 'Charms'" (Moore) (H.M.V. DA886).
 Wurlitzer organ solo—Jesse Crawford, "Ten Little Miles from Town" (Kahn) (H.M.V. EA426).
 Foxtrot—Jack Hylton's Orchestra, "Palace of Dreams" (Waller) (H.M.V. B5159).
 Foxtrot—Jack Hylton's Orchestra, "Babying You" (Ruby) (H.M.V. B5160).
 Waltz with male quartet—The Troubadours, "Beggars of Life" (Bren-nan) (H.M.V. EA441).
 10.24: Tenor solo—Jno. McCormack, "Mother Machree" (Ball) (H.M.V. DA958).
 Tango Argentino—International Novelty Orchestra, "El Choclo" (Vil-loldo) (H.M.V. EA364).
 Waltz—Jack Hylton's Orchestra, "The Angelus was Ringing" (Dama-rell) (H.M.V. B5481).
 Foxtrot with vocal refrain—Kahn's Orchestra, "In a Bamboo Garden" (Donaldson) (H.M.V. EA435).
 10.38: Scottish comedian—Sir Harry Lauder, "The Pirate" (Lauder) (H.M.V. D1434).
 10.40: Chorus with orchestra—Light Opera Company, "Hit the Deck" Vocal Gems (Youmans) (H.M.V. C1433).
 Foxtrot—Jack Hylton's Orchestra, "Don't Forget" (Hanley) (H.M.V. B5159).
 Foxtrot with vocal chorus—Rhythmic Eight, "There's a Rickety Rakey Shack" (Tobias) (Zonophone EE97).
 Hawaiian—Ferera and Paaluhl, "Kilima Waltz" (trdtl.) H.M.V. B2369).
 Marimba orchestra, "When It's Love Time in Hawaii" (Heagney) (Zonophone 3852).
 Foxtrot—Paul Whiteman's Orchestra, "O, Ya, Ya" (Klages) (H.M.V. EA340).
 Foxtrot—Shilkret's Orchestra, "Sometimes I'm Happy" (Youmans) (H.M.V. EA253).
 11.0: Close down.

4YA, DUNEDIN (463 METRES)—SATURDAY, MAY 4.

- 7.15: News session.
 8.0: Town Hall chimes.
 8.1: Overture—National Symphony Orchestra, "William Tell" (Rossini) (Zonophone Records 2969-70).
 8.13: Popular songs—Miss Minna Ahlers, (a) "Maori Eyes" (Walter Smith); (b) "Just Like a Melody From Out of the Sky" (Donaldson).
 8.21: Tenor solo—Joseph Hislop, "Mary" (Richardson) (H.M.V. Record DA901).
 Wurlitzer organ solo—Jesse Crawford, "Roses of Yesterday" (Berlin) (H.M.V. Record EA443).
 8.27: Scottish humour—Mr. Buster Brown, (a) "I Wish I Had Someone to Love Me" (Lauder); (b) "He Was Very Kind To Me" (Lauder).
 8.35: Humour—Mr. Lester Moller, "Bertram on Geography" (Stanford).
 8.41: Vocal trio—Dalhart, Robinson and Hood, "Climin' Up De Golden Stairs" (H.M.V. Record EA382).
 Pianoforte solo—Pauline Alpert, "The Doll Dance" (Brown) (Zono-phone Record EE98).
 8.47: Topical hits—Mr. Geo. Wiseman, (a) "The Gamekeeper" (MS); (b) "The Photo of the Girl" (Merson).
 8.56: Mandolin quartet—Athenian Mandolin Quartet, "Aloha Land" (Ferera) (H.M.V. Record EA24).
 Chorus—Mixed Chorus, "Sea Songs" (H.M.V. Record EB25).
 Wurlitzer organ solo—Jesse Crawford, "The Dance of the Blue Dan-ube" (Fisher) (H.M.V. Record EA404).
 9.5: Weather report.
 9.7: Soprano solo—Mrs. R. D. Carty, "Scenes That Are Brightest" (Fitzbull).
 9.11: Orchestral—New Light Symphony Orchestra, "Glow-worm Idyll" (Lincke) (Zonophone Record EF20).
 9.15: Popular song—Miss Minna Ahlers, "Topical Blues" (Schroeder).
 9.20: Scottish humour—Mr. Buster Brown, "The Portobello Lassie" (Lauder).

- 9.25: Humour—Mr. Lester Moller, "Under the Barber's Knife" (Leacock).
 9.32: Orchestral—Light Opera Orchestra, "The Gondoliers" overture (Sullivan) (H.M.V. Record D1334).
 Chorus—D'Oyly Carte Opera Company, "List and Learn" (Sullivan) (H.M.V. Record D1334).
 4.40: Soprano solos—Mrs. D. Carty. (a) "The Song That Reached My Heart" (Jordan); (b) "They're Far, Far Away" (Melville).
 9.48: Topical hit—Mr. George Wiseman, "A Mixed Grill" (Sharpe).
 9.58: Chorus—D'Oyly Carte Opera Company, (a) "Good Morrow, Pretty Maids"; (b) "For The Merriest Fellows Are We" ("The Gondoliers") (Sullivan) (H.M.V. Record D1335).
 Chorus—D'Oyly Carte Opera Company, "Are You Peeping?" ("The Gondoliers") (Sullivan) (H.M.V. Record D1336).
 10.6: "His Master's Voice" dance programme:
 Orchestral—Piccadilly Orchestra, "My Beloved Gondolier" (Tibor) (H.M.V. Record B2575).
 Vocal duet—Maurice and Sidney, "I'm Going Back to Old Nebraska" (Sissle) (Zonophone EE117).
 10.13: Chorus with orchestra—Ever-ready Hour Group, "Down South" (Myddleton) (Zonophone EF8).
 Wurlitzer organ solo—Chas. W. Saxby, "Can't You Hear Me Say I Love You?" (Derickson Brown) (Zonophone 5094).
 10.20: Chorus—The Revellers, Gems from "Tip Toes" (Gershwin) (H.M.V. Record C1293).
 Foxtrot—Arcadian's Dance Orchestra, "Chilly-Pom-Pom-Pec" (Bryan) (Zonophone 5169).
 Foxtrot with vocal refrain—McEnelly's Orchestra:
 "What Are We Waiting For Now?" (Kortlander) (H.M.V. EA322).
 10.29: Chorus—Light Opera Company, gems from "Sunny" (Kern) (H.M.V. Record C1293).
 Vocal duet—Johnny Marvin and Ed. Smalle, "Mary Ann" (Davis) (H.M.V. Record EA339).
 Baritone solo—Jack Smith, "The Best Things in Life Are Free" (De Sylva) (H.M.V. Record EA332).
 10.39: Bass solo—Paul Robeson, "Down De Lovers' Lane" (Cook) (H.M.V. Record B2777).
 Violin solo—Fritz Kreisler, "Indian Love Call" (Friml) (H.M.V. Record DA785).
 Wurlitzer organ solo—Jesse Crawford, "My Blue Heaven" (Donaldson) (H.M.V. Record EA284).
 Hawaiian—Hilo Hawaiian Orchestra, "Aloma" (Bowers) (H.M.V. Record EA310).
 10.52: Chorus and orchestra, Victor Arden, Phil Ohman, chorus and orchestra, selections from "Good News" (De Sylva) (H.M.V. Record EB28).
 Foxtrot with vocal refrain—Nat Shilkret's Orchestra, "Where's My Meyer?" (Wolfe) (H.M.V. EA267).
 Orchestral—Victor Salon Orchestra, "The World Is Waiting For the Sunrise" (Lockhart) (H.M.V. Record EA186).
 11.0: Close down.

Sunday, May 5

1YA, AUCKLAND (333 METRES).—SUNDAY, MAY 5.

- 3 p.m.: Afternoon session—selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.30: Close down.
 6.0: Children's session, conducted by Uncle Leo.
 6.55: Relay of service from the Church of the Holy Sepulchre. Preacher, Rev. G. G. Bell.
 8.30: Overture—Band of Royal Italian Marines, "Egmont" (Beethoven) (Columbia Record 960).
 8.38: Vocal duet—Apollo Duo, "Love Divine" (Stainer).
 8.42: Trombone solo—Fred Myers, "On With the Motley" (Leoncavallo) (Columbia Record 1233).
 8.46: Baritone solo—Mr. Roy Stephenson, "The Lord is My Light" (Allister).
 8.50: Hymns—Band of H.M. Grenadier Guards, (a) "Nearer My God to Thee" (Dykes); (b) "Onward, Christian Soldiers" (Sullivan).
 8.56: Soprano and tenor solos—The Apollo Duo (a) soprano, "Hear Ye, Israel" (Mendelssohn); (b) tenor, "The Sorrows of Death" (Mendelssohn).
 9.4: Cello solo—Pablo Saras, "Concerto in A Minor" (Gottfriedmann) (Columbia Record 7359).
 9.8: Baritone solos—Mr. R. Stephenson, (a) "All Through the Night" (old Welsh air); (b) "To Anthea" (Hutton).
 9.14: Soprano and tenor solos—Apollo Duo, (a) soprano, "With Verdure Glad" (Haydn); (b) tenor recitative and aria, "In Native Worth" (Haydn).
 9.22: Selection—Band of H.M. Grenadier Guards, "Ritigletto" (Verdi) (Columbia Record 3890).
 9.30: Vocal duet—Apollo Duo, "My Song Shall be Always of Thy Mercy" (Mendelssohn).
 9.34: Close down.

2YA, WELLINGTON (420 METRES).—SUNDAY, MAY 5.

- 3.0 p.m.: Selected studio items.
 4.30: Close down.
 6.0: Children's session, conducted by Uncle George.

- 7.0: Relay of Evening Service from St. Thomas' Anglican Church, Newtown:
 Preacher: Rev. C. V. Rooke.
 Organist and Choirmaster: Mr. W. A. Gatheridge.
 8.15: Relay from His Majesty's Theatre of Second Band Recital of the Wellington Municipal Tramways Band, under the conductorship of Mr. T. Goodall.
 Close down.

3YA, CHRISTCHURCH (306 METRES).—SUNDAY MAY 5.

- 3 p.m.: Afternoon session—selected studio items.
 4.30: Close down.
 5.30: Children's song service.
 6.15: Hymn tunes.
 6.30: Relay of service from St. Albans Methodist Church, Rugby Street.
 Preacher, Rev. L. B. Neale; Choirmaster, Mr. W. Simpson. Organist, Miss Clarice Bell, L.A.B.
 7.30: (approx.) Gramophone recital.
 8.15: Rebroadcast of 2YA, Wellington (relay from His Majesty's Theatre, Wellington, of concert by Wellington Municipal Tramways Band, under the conductorship of Mr. T. Goodall).
 Close down.

4YA, DUNEDIN (463 METRES).—SUNDAY, MAY 5.

- 5.30 p.m.: Children's song service, conducted by Big Brother Bill.
 6.30: Relay of service from St. Andrew's Street Church of Christ:
 Preacher: Pastor W. D. More.
 Organist: Miss Stokes.
 8.0: Relay from St. Kilda Band Rotunda of concert by the St. Kilda Band, under the conductorship of Mr. James Dixon.
 9.15: Close down.

Successful Pianiste

The Saving Grace

MISS THELMA WILLOUGHBY, of Wellington South, who is to broadcast from 2YA on April 29, recently gained her L.A.B., and now has been advised by the local secretary for the Royal Academy of Music that she has been granted a two years' exhibition at the Royal Academy. Miss Willoughby gained many prizes as a pianist at the local competitions, gaining a scholarship when only 13 years of age, and winning the gold medal in the Schubert centenary competition last year. She was only 15 years of age when she gained her L.A.B. It is Miss Willoughby's intention to take advantage of the exhibition, and will probably leave for London in July or August. Miss Willoughby is from the studio of Mr. Gordon Short. She will give a public recital on June 5. On

A COMPETITOR in the recent one-act play competition now asks 1YA for the return of her MS. which was not successful in securing a prize. The writer, who has evidently a keen sense of humour, intimates that she will try again, and she encloses a sketch of a humble author calling upon a robust editor:

"You received my play, of course? Will you produce it?"
 "Why, yes, certainly! Boy, look through the waste-paper basket and produce Mr. Minkle's play for him."

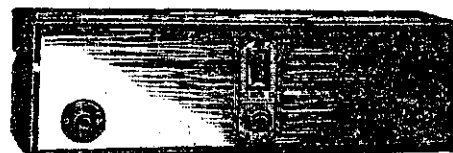
the 29th, in addition to two pieces by Chassin, she will play the first movement of the Italian Concerto by Bach.

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WELLINGTON

Notes and Comments

By
"SWITCH"

DO the public really want "good music?" In a certain New Zealand city two exceedingly talented travelling instrumentalists gave a public concert at most reasonable prices, and were extensively advertised. Out of a population of about 90,000 there were only 250 people present at the concert. If broadcast listeners are to be gauged under the same proportion, only one person out of every 360 listeners wants a whole programme of "good music," or only 111 persons out of 40,000. Naturally, when a virtuoso of world-renown visits New Zealand the attendances are very much larger, but a considerable proportion attend out of curiosity, or to say they have heard the great "so-and-so," but we can't get these virtuosos to broadcast. "Switch" can vouch for the figures quoted at the commencement of this paragraph.

THE flight across the Tasman Sea shortly to be undertaken by the Auckland airman, Mase, will offer broadcast listeners an interesting broadcast reminiscent of the history-making feat of the Southern Cross. Mase leaves England in his 'plane for

New Zealand, via Sydney, Melbourne, and Hobart. His first stop in New Zealand is to be Christchurch. According to careful measurements by "Switch," on his Admiralty chart, the nearest point of New Zealand to Hobart is about West Cape, near the West Coast Sounds. The distance is 920 miles. The distance from Sydney to Cape Farewell is 1080 miles.

IT is to be hoped that airman Mase has a successful run, for his will be the pioneer flight from England to New Zealand. Listeners who own multi-valve sets will have a "dress-circle seat," as on the occasion of the Southern Cross flight. They will be able to follow Mase's progress as described by the Australian stations, as well as by the New Zealand stations. Mase appears to be a man of the right metal, for despite a rather severe crash in England recently, he was soon in the air again testing his machine for the big flight.

BY making the casting in the centre of the "roaring forties" airman Mase, during his flight across the Tasman from Hobart, may have the good fortune to have the aid of a strong westerly wind, which will mean a substantial "plus" to the speed of his 'plane. Mase's home is in Auckland, and if good luck attends his flight, he will pass over Wellington, winging his way northward from Sockburn. It looks as though broadcast listeners are to have an interesting event to follow.

MR. J. H. OWEN, ex-president of the Amateur Radio Society of Wellington, gave an interesting broadcast descriptive of his experiences during his recent trip to England, from 2YA, Wellington, last week. Mr. Owen proved himself an ideal broadcaster. He adopted an easy conversational method of delivery, and pitched his voice most naturally, so that he held the interest of listeners from start to finish.

IN his recent broadcast from 2YA, Wellington, Mr. Owen by no means exhausted his stock of material covering his observations upon broadcasting in Canada, England, and the Continent. He was absent from New Zealand for about a year, and all he saw and heard in connection with radio could not be covered in a few minutes' talk. Therefore, Mr. Owen's address at the general meeting of the Wellington Radio Society next month should draw a full house. The society has decided to hold the meeting in the big conference hall at the Dominion Farmers' Institute.

MR. BYRON BROWN, who has proved such an acceptable president of the Wellington Radio Society during the absence of the late president, Mr. J. H. Owen, during his tour abroad, has intimated to Mr. Owen that he accepted the presidency only to keep the position while the ex-president was away, and has no intention of standing for election if Mr. Owen will accept nomination. Both gentlemen have proved themselves ideal

presidents, and the members could truthfully say "How happy we could be with either!" As neither will accept nomination against the other, there will be no ballot for the presidency, and a pre-election arrangement will result in one of the two accepting nomination.

THE position of the Wellington Radio Society is one that calls for serious consideration. The attendances at the meetings are anything but good, despite the very attractive lectures and demonstrations which are a feature of the meetings. Ever since the foundation of the society about five years ago, it has been an energetic organisation in its efforts to safeguard the interests of broadcast listeners. It has unceasingly agitated for certain objectives, the majority of which have been gained, and during those periods when listeners were most dissatisfied with broadcasting matters the membership roll was at its zenith. The marked improvement in New Zealand broadcasting seems to have resulted in a falling off of membership.

A SUGGESTION has been made that the Wellington Society should consider the advisability of seeking an amalgamation with the Wellington amateur transmitters. Whether this is possible, "Switch" cannot say, but anything that will foster a wider interest in club matters should be encouraged. In the early days of broadcasting in Wellington, when the amateur transmitters were operating on a band of longer wavelengths, a little friction was engendered between them and the broadcast listeners owing to the latter suffering interference from some of the amateur transmitters. With the advent of the use of the ultra-short wavelengths by the amateurs, broadcast listeners now rarely experience interference from them, and the happiest relations exist between the two sections.

THE increase in the amount charged for city radio traders' licenses was most favourably commented upon by one of Wellington's leading dealers in a conversation with "Switch" recently. He remarked, "The greatest difficulty legitimate radio traders have had to contend with has been the mushroom small retailer. He popped up in a night, operated with insufficient capital, lacked true business experience, and soon collapsed. We wholesalers have unpleasant recollections of some bad debts which remain on our records as a reminder of an undesirable feature of the radio trade. I think the larger license fee will have a beneficial effect."

THE Friday evening following the finding of the missing aeroplane Southern Cross, found many Well-

ington listeners combing the ether for the Australian stations to hear the fuller details concerning the plight of the Kingsford Smith party. But a grim disappointment awaited the eager listeners. Reception from across the Tasman, which had been exceptionally strong on the previous night, had dwindled down to zero. Over a dozen listeners informed "Switch" that after endeavouring for over half an hour to bring in an Australian station they were unable to hear more than the faintest whisper from the best of them.

NO one can definitely assert why the Australian stations were so atrociously weak on the above occasion, other than attributing it to some atmospheric phenomenon. But on the Friday evening referred to, a dense fog had settled over Wellington, and the atmosphere was unusually warm for the time of the year. Wellington listeners will recall parallel conditions, a year or so ago, with a similar blanketing of the Australian stations. As was to be expected, some listeners blamed their equipment, but on exchanging experiences with others, discovered that the fault was in the air. Strangely enough, "Switch" got the Japanese stations, JOAK and JOHK, fairly well on the loudspeaker, while the Australians were the merest shadow, though the latter improved greatly after midnight.

WHEN referring to the erection of such a powerful station as 2YA, Wellington, Mr. Coates remarked that in a time of national crisis it would be invaluable to the public of New Zealand. Such an illustration now comes from Melbourne. Immediately the tragic effects of the appalling floods in Tasmania become known, 3LO, Melbourne, made available the whole of their organisation and services to relieve the extraordinary situation caused by interrupted communications and for the purpose of assisting relief efforts. Tasmanians were without any excepting local news of the disaster and 3LO organised a special broadcasting news service in conjunction with 7ZL, Hobart, to keep them posted with urgent reports of the increase and subsidence of the flood water and the safety or danger of their relatives and friends' positions in the affected areas.

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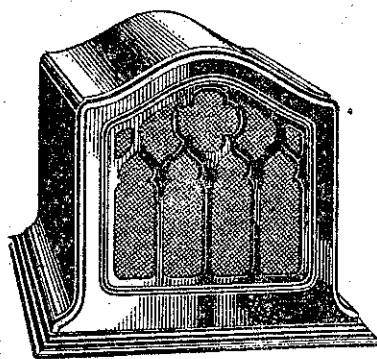
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Kindling within the strings of the waved air—
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—Shelley.

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Offenbach Again.

THIS lovely boat song is sung as a duet in the Venetian Scene in the opera, "Tales of Hoffman," by Offenbach. It occurs later in the opera as an orchestral "Intermezzo." It is a typical barcarolle. The music suggests the gentle swaying of the gondola as it glides through the moonlit water. The accompanying words are a rapturous love poem, in which the lovers sing of the beauty of the night, imploring its blessings on their enchantment.

The "Venetian Scene" is the second of the adventures of Hoffman, in which he falls in love with Juliet, who, however, has only engaged his affections because Hoffman boasted that he was proof against her fascinations. When he goes to her house to visit her, he finds that she has fled with her chosen admirer, and thus the second love dream of Hoffman is shattered.

Mr. Nora Greene and Mr. Roy Hill will sing the Barcarolle, "Night of Stars" at 2YA on Monday, April 29.

Saint-Saens in Grim Mood.

A LEGEND popular in the middle ages tells us that on Hallowe'en the dead, in the churchyards arose from their graves and indulged in a wild carnival at which Death, the monarch of all, held court. It is this hideous Danse Macabre—"Dance of Death"—that is depicted in this famous composition.

It opens with twelve strokes, indicating the striking of the clock at midnight—the signal of the impatient hand of Death calling to the revel. In obedience to the summons the spectres arise from their graves and approach for their part in the ghastly dance. Death tunes his fiddle, and the ghostly multitude "reel to his maddening measures." The dance is interrupted by a lyric passage, brief but extraordinarily sweet, representing the despairing condition and hopeless longing of the dancers, but Death plays on, and the night wind sings through the cypress-trees. The dead must needs dance, and the revel grows wilder. Suddenly there comes a hush, and the crowing of the cock is heard. The dawn has arrived and the ghostly festival must end. The spectres hasten away to return to their graves. Death plays a last wail on his fiddle, then he too, leaves the scene.

The orchestra at 2YA will include "Danse Macabre" in their programme on Monday, April 29.

"To Music."

THE original words of this song were written by Schubert's friend, a Swede named Franz Schober, who survived the composer 55 years. The poet left Vienna in 1817 for a year's holiday in his native Sweden, and it was about this time that "To Music" was written. It was through Schober that Schubert met the famous operatic tenor, Vogl, who was to make an electrical success with the "Erl King." Schober was a young student in Vienna and Schubert formed a high opinion of his character. The song, "To Music," is all the more interesting when we learn that it was through its author, the composer's unselfish friend, that Schubert was enabled to throw off the fetters of his position, and devote himself exclusively to music.

"To Music" will be sung by Miss Nora Greene on Monday, April 29, at 2YA.

An Early Mozartian Opera.

AS has happened in several cases, the opera is dead, but the overture remains. Mozart's one-act comedy was first produced in 1786. Its original name was Schauspielfeldrektor. In England it was called "The Manager," and the French production "L'Impresario," the name by which the overture is always known. It is to be regretted that Mozart died at such an early age; he has left us some wonderful music, but had he lived longer, there is no estimating what he might have done.

The "Impresario Overture" will be put on the air by 3YA on Sunday, April 28.

Heine and Schumann.

ANY student of the strange and romantic career of Napoleon, the Man of Destiny, will learn more and "feel history" more by hearing a good rendering of Schumann's "Two Grenadiers," than by reading all the books written by those who either hated the Emperor or loved him. The words are by the great German poet Heine. The song is therefore the work of two men who had every reason to hate the tyrant. But the two grenadiers, returning from the disastrous Russian expedition and hearing that France is ruined, excite our pity and admiration. In this moving song the one is badly wounded, and begs the other, his friend, to see that he is buried in France. As he speaks of his country the air of the "Marseillaise" is heard. We have here a small indication of the devotion with which the great soldier inspired his troops. The final chords

in the minor key clearly indicate that the soldier dies.

Mr. T. D. Williams will sing "The Two Grenadiers" at 3YA on Sunday, April 28.

A Swiss Hero.

"WILLIAM Tell," the last of Rossini's operas, was first performed at Paris in 1829. The libretto first supplied was a translation of Schiller's famous drama, but it proved so uninspiring that the composer called in the aid of Armard Marrast. The overture is full of interest, especially the second section, with its hint of the wonderful storm scene in the opera, and the final stirring march. Rossini retired at the early age of thirty-six, and was so utterly lazy that he did most of his composing while in bed. It is said that on one occasion he was completing a new song when the sheets fell on to the floor. Rather than disturb himself to the extent of getting up, he re-wrote the whole thing!

The "William Tell" overture will open the programme at 4YA on Saturday, May 4.

Champagne Standard.

"THE Gondoliers" was the twelfth joint effort of Gilbert and Sullivan, the famous partners in English light opera. It was at the time this work was first produced that there occurred the temporary break in the most wonderful combination of the English stage. There was a dispute over the purchase of a carpet. It had

been bought, and Gilbert had not been consulted. Fortunately the break did not last very long, and their later works show that it did not affect their ability to work together. The overture to "The Gondoliers" is a succession of gay tunes lightly strung together, just the right thing to prepare one for the frolicsome scenes to follow. It is interesting to note that this opera is a great favourite with Their Majesties the King and Queen, and they often take the opportunity of seeing it, appearing very amused at the comical situation of the joint kings.

The overture appears on 4YA's programme for Saturday, May 4.

Hebridean Music.

MRS. MARJORY KENNEDY-FRASER was born in Perth, and is the daughter of David Kennedy, the famous singer of Scots songs. At the early age of twelve she toured with her father as accompanist, and when fourteen, she sailed, with him, round the Cape of Good Hope to Australia for a world tour lasting four and a half years. Later she studied opera at Milan, and later received instruction from Marchesi in Paris. In 1905 she visited the Outer Hebridean Isles, and since then she has specialised in Celtic music research and original work, converting the treasure of national melody preserved by the Island Gaels into art songs without sacrificing the or-

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ginal character of the melodic material.

Miss Mollie Atkinson has chosen one of these songs "An Eriskey Love Lilt" as one of her items from IYA on Sunday evening, April 28.

A Herrick Ode.

"TO ANTHEA" was first published in 1850 in a volume of Herrick's songs set to music by John L. Hatton. In the preface to this volume Hatton says that the songs were not composed with the intention of having them published. Most of them were given as souvenirs to his friends at various times, and when it was decided to publish a number of them they were kindly lent by the owners. There is a much older setting of this song by Henry Lawes which was published in 1669, but as this was not well known Hatton may not have heard of its existence.

Hatton was born in Liverpool in 1809, and was self-taught. He produced an operetta at Drury Lane, London, and later was director of music at the Princess's Theatre, under Charles Keane. While holding this post he composed incidental music for a number of the Shakespearean plays.

Mr. R. Stephenson will sing "To Anthea" at IYA on Sunday evening, May 5.

"Martha."

THE survival of "Martha" for so many years when the majority of its contemporaries have long since been

forgotten, can be due only to sheer merit. Flotow produced no other very outstanding opera, and very little of his work is now heard. This opera was first produced in Vienna in 1847. It contains several very tuneful numbers and the overture is always a favourite. It will be performed by the orchestra at 2YA on Friday, May 3.

A Quartet with "Go."

HAVE you ever wondered what your first feelings would be were you informed that you were really king or queen of a country which you had never seen? In the "Gondoliers," there are the two couples, with one of the men the king of the isle and his wife, queen. The words by Gilbert are splendid and Sullivan's music has a rhythm which carries an audience off its feet. We are told that on the first night of the opera, the occupants of the pit and gallery provided an extempore entr'acte by whistling this tune with the greatest energy, to the great amusement of the more staid patrons in the stalls and circle.

The Philharmonic Quartet will sing "Regular Royal Queen" at 2YA on Friday, May 2.

A Lovely Duet.

THE opera, "La Boheme," is a very faithful picture, by turn amusing and pathetic, of life in the poor artists' and students' quarter of Paris in the eighteen-forties. The life was extremely hard, but those who lived it found many compensations in it, especially

among the grisettes of the Quarter. Rudolf the poet and Marcel the artist are working in their attic, alone. Their sweethearts, Mimi and Musetta, have gone, and they are both very miserable. Suddenly they throw down their pen and brush and cannot keep up the pretence any longer. Rudolf sits and gazes at Mimi's little pink bonnet while Marcel caresses a bunch of ribbons. They then pour out their woes in a moving duet, in which each tells how through all his attempts at work he is haunted by the eyes and the hair of his fickle love. Then Rudolf trying to hide his emotion from his friend turns and carelessly asks him the time. Marcel starts from his dream, and the old Bohemian spirit asserting itself again, answers cheerily, "Time for yesterday's dinner."

A record of this duet, "Ah, Mimi, you will never come back to me," sung by John Hislop and Apollo Granforte, will be used at 2YA on Monday evening, April 29.

"The Pathétique."

TSCHAIKOWSKY'S Sixth Symphony was performed for the first time at Petrograd, October 28, 1893, the composer conducting. It received a luke-warm reception only. The morning after the concert the composer was discussing with his brother, Modest, the sending of the Symphony to the publisher. It had not been given a title and Tschaiowsky was not satisfied with just "No. 6." Modest wrote, "I suggested 'Tragic,' but this he rejected. I left the room before he had come to a decision. Suddenly I thought 'Pathetic.' I went back to the room, and I said the word to Peter. 'Splendid, Modi, bravo Pathetic,' and he wrote in my presence the title that will forever remain." Writing of the work to his publisher, the composer said, "This Symphony met with a singular fate. It has not exactly failed, but it has incited surprise. As for me, I am prouder of it than any other of my works."

This Symphony will be heard from 2YA on Thursday evening, May 2, being one of the items relayed from the Wellington Symphony Orchestra's concert in the Town Hall.

"Arms and the Man."

STRAUSS'S charming opera, "The Chocolate Soldier," is founded on George Bernard Shaw's clever comedy, "Arms and the Man." The opera has enjoyed astonishing popularity, and as is to be expected from an opera of Viennese origin, it contains some enchanting waltz themes. One of the most popular is the solo, "My Hero," and the melody is a good accompani-

The N.Z. Radio Listener's Guide, 1929-30

PUBLICATION of this book, which is eagerly awaited by many listeners, will be made (D.V.) on April 30 or May 1. The final pages have now been practically completed, and the better part of the book is printed. It remains only for the remaining section to be run through the printing press and assembly to be made.

Some little delay has been occasioned in the production of the volume by the necessity for very careful checking of all the data being utilised. This has been necessary, of course, by reason of the permanent nature of the publication. Every effort has been made to avoid error. Articles of a very informative and authoritative nature are embodied in the book, a great deal of original work having gone to their compilation. It is felt that the "Guide" will take rank as a very valuable contribution to wireless literature. Some of the articles are outstandingly original in conception, and all are either the result of original investigation or thorough checking up and re-writing of prior activity.

Very substantial preliminary orders have been received from both radio dealers and booksellers, and it is anticipated that, as was the case last year, the edition will be completely sold out.

H.M.S. Diomedes' Band

A MUSICAL treat was accorded listeners on Sunday afternoon by 2YA placing on the air the Band of H.M.S. Diomedes. This was by permission of Captain Hall, D.S.O., and Bandmaster Kirby. The performance was of interest and a welcome variation of the Sunday afternoon's customary routine. The band proved itself to be an excellent combination, its numbers being performed with clarity and feeling. Many listeners joined heartily in the thanks conveyed to the band at the conclusion of the performance by 2YA Announcer.

For Sale or Exchange.

See page 32 for column of casual advertisements.

ment to the good old-fashioned graceful waltz.

On Saturday, May 4, 2YA is making use of a record of "My Hero," sung by Virginia Perry and chorus.

RADIO LISTENERS' GUIDE.

1929-30 Edition will be on sale May 1st. The Chapters are "Radio in New Zealand," "Wireless from the Technical Aspect," "Multi-valve Receivers," "Aerials, Earths and Accessories," "Short-Wave Reception," "Trouble Tracking," "Reference Section," and a completely revised Glossary.

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CONFLICTING opinions seem to prevail as to the value of short wave for the transmission of entertainment. On one hand there is the man who has never heard good reception, knows nothing about short-wave work, and who will naturally condemn it, saying it is merely in its experimental stage.

His versatile opponent, even though he also knows nothing of it, is quite open to be convinced on the merits of this type of broadcasting, and, being interested, will perhaps find the description of an efficient short-wave helpful for the time when he decides to build one. One has only to glance at a list of the various short-wave stations operating all over the world to realise that much is "on the air" that is being missed unless the necessary apparatus is available on which to receive it. Every afternoon two or three stations are transmitting from America, later in the evening Russia is to be heard, not to mention the delightful special programmes for Australia and New Zealand transmitted by PCJ on Saturday afternoons. There is no country on the map that owners of short-wave sets are not in touch with, and one is kept posted with a host of news not available in the Press.

The Short-Wave Receiver.

WHEN analysed, most short-wave sets will be found to consist of a detector-valve in one of its most simple forms, followed by one or two stages of transformer coupling. Simplicity is the keynote of efficiency, and although stunt circuits have been published, they have not held their own against the very simplest. Either they have been unstable in operation and difficult to tune, or inefficient in general performance.

The one about to be described is one that has not only been built by the writer, but also by numerous amateurs, and in all cases the results have indicated that it is reliable and does not suffer from the numerous drawbacks

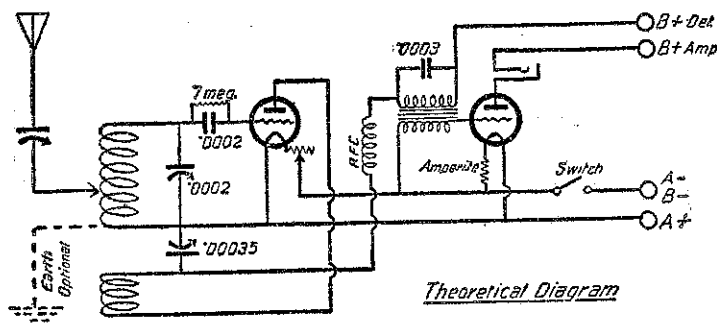
usually associated with these receivers.

Referring to the theoretical diagram, it can be seen to consist of a single detector with a single stage of audio amplification. The audio-frequency path from the detector-valve will be seen to be taken from the opposite end of the reaction coil to the usual method, as this was found to give smoother reaction control with less body capacity. The dotted line showing the earth connection was found to be unnecessary in a number of cases,

and allows of a smaller tuning condenser, making for ease of tuning.

Data for the Coils.

PROCURE a length of cardboard tubing of 3in. outside diameter, and cut into three longitudinal sections. The tube will need to be about 9 or 10 inches long in order to possess a good grip, while winding the coil. Now fasten the three sections together with adhesive tape or gummed paper, and wrap round two or three turns of brown paper. This makes an ideal



sufficient capacity to earth being produced by the various battery cables, etc.

Mounting the Components.

AN ebonite panel, 12in. long by 6in. high, will give ample room for well spacing, and the baseboard measuring at least 9in. from back to front will allow the coils to be placed at a distance from the metal plates of the condenser. It is small points like this which make all the difference, and an overcrowded receiver suffers from the disadvantage that it is extremely sharp in tuning, often making a station impossible to retain when the hand is taken from the controls.

Screw the panel to the front edge of the baseboard, using two brackets if no cabinet is to be used. The two condensers are mounted on the front, the one of smallest capacity being on the left. Choose condensers having low loss features, and if no pigtail connection is provided between the moving plates and the terminal, solder on a small length of flexible stranded wire. Without this positive connection, the chances are that many unexplained noises will accompany every movement of the tuning controls.

In the centre is mounted the detector rheostat, the resistance of which is chosen to suit the particular valve used. If of .25 ampere consumption, a rheostat of 15 ohms will be suitable, but if of .06 or .1 amp. consumption, then a 30 ohm rheostat will give better control. On the right hand bottom corner is mounted the speaker or phone jack. As the coils play such an important part, their construction will be given in detail.

To obtain a complete wavelength range of from 10 to 70 metres, a set of coils will have to be made, consisting of 4, 5, 6, 8 and 12 turns. This may seem a large number of separate coils, but they also cover the reaction coils,

gether. This string should be at least the diameter of the wire, but preferably slightly larger. One-eighth inch spacing between wires results in an extremely efficient inductance.

It should have been mentioned that before winding on this wire lay three strips of celluloid along the former, equidistant, winding the wire round the whole. The reason for this will be apparent presently.

A full forty turns in one length is required, which is cut up presently. After making the remaining end tight in a similar way to the first, end, proceed to unwind the spacing string.

Fairly thick celluloid cement is used to paint on, along each of the celluloid strips, thus holding the wire firmly, and keeping a constant spacing between turns. When thoroughly dry dismantle the cardboard former, taking care not to damage the coil. We now have a self-supporting, low loss coil, which will have to be divided into smaller calls, each having the following number of turns, 5, 6, 7, 9, and 13 turns.

Mounting the Coils.

FOR the bases a number of valve pins and sockets will be needed. Four sockets will fulfil this side of our requirements, but each coil having two contacts will necessitate the use of 10 valve pins. Choose ones having about 1/4in. of tapped metal at one end, and if no shoulder is provided, two nuts to each pin will be required.

For the coil mounts, cut out of one-eighth inch ebonite, ten pieces, each measuring 2 1/2in. long by 1/4in. wide. With centres a quarter of an inch from each end, drill two holes in each piece to

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make the tapped portion of each pin. The holes will be 2in. apart.

Reference to the diagram will show how each coil is mounted by clamping two pieces of ebonite, one on either side of the wire, and tightening up by the

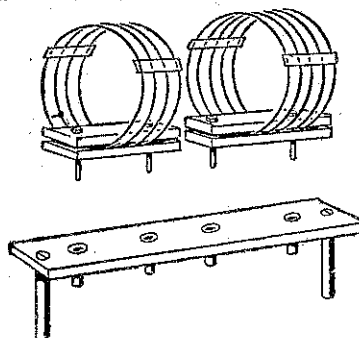
the same way and then turn to the base. A strip of 3-16in. ebonite measuring 6 1/2in. by 1/2in., has to be drilled with six holes.

Two, half an inch from each end, are used to fix the base to the wooden

lugs to provide contact. This completes the coils and mounting and is the most difficult part finished.

The Lay-Out.

THE lay-out diagram gives the general arrangement and the relative positions of the various components.



A tight fitting cork can be inverted and screwed to the baseboard, so that when the boiling tube is wound it can be placed over the cork. Wind with 100 turns of No. 32 DCC wire and space with cotton or fine string. After taking off the spacing give a coat of thin celluloid solution. Fasten each end of the wire with cotton until the solution has dried out.

It will be seen that a switch has been mounted at the rear of the baseboard. If a cabinet is to be used, this switch could be fastened to the front panel with no alteration to the existing wiring beyond an extension of the connections to the switch. If antimicrophonic valve sockets are not used on both valves, the detector is the most sensitive and one on this position is advised.

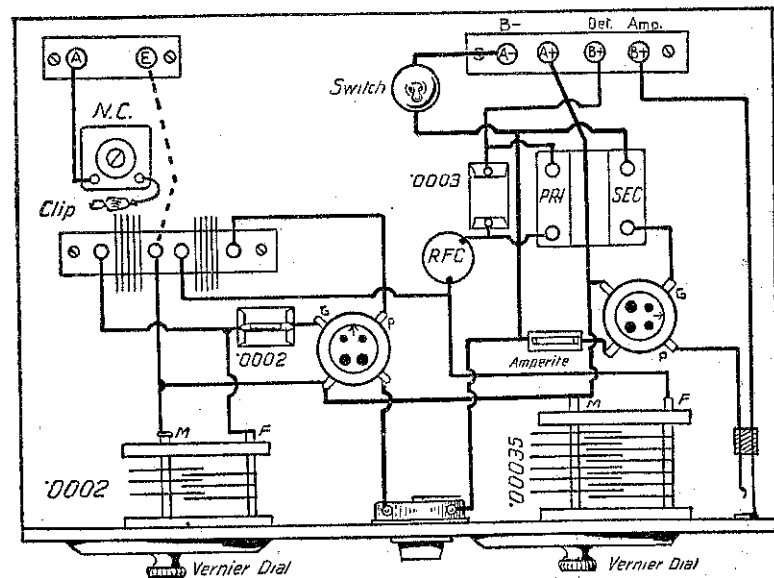
The six terminals are mounted on two strips, one containing two and the other four terminals.

Wiring Up.

IN wiring up run all grid and plate wires direct to their destination, disregarding all thoughts of the finished appearance. Right angle bends have been indicated for the sake of clearness. The small condenser behind the soil is a series aerial condenser, and can be in the form of one of the many neutralising condensers on the market. The length of flexible wire to one side of this condenser is used for a variable aerial tapping on the grid coil, and a small projecting tag will have to be soldered to the centre turn of each coil. This is indicated in the diagram.

No difficulties should arise in wiring up, and by referring to the theoretical and lay-out diagram the beginner will get an idea of the meaning of these theoretical diagrams.

One word on the RF choke. This has to be one designed for short-wave work and if the constructor wishes to make one himself the following will be helpful. A glass test tube, known to chemists as a "boiling tube," can be used.



Components for "Round-the-World" Two

1 Variable condenser (low loss .0002 m.f.d.).

1 Variable condenser, .00035 m.f.d.

2 Fixed condensers, .0002 with leak, 7 meg. and .0003 m.f.d.

2 Anti-microphonic valve sockets.

1 15-30 ohm Rheostat.

1 Audio transformer (1-5 ratio).

2 Vernier dials.

1 Midget neutralising condenser. Panel and baseboard.

1 doz. Terminals.

18 gauge enamelled or tinned copper wire.

1 Amperite.

44 Valve pins and sockets.

Ebonite strips, etc.

pins at each end. Two small soldering lugs fixed underneath each nut provides a means of connecting the coil to the D pins. Mount each of the five coils in

baseboard. The two in the centre are 1/2in. apart with the remaining two, 2in. on either side. In the four inside holes screw the valve sockets, with soldering

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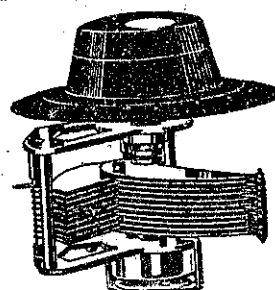
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Grid
Leaks
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When completed, connect up batteries, and using the phones, see if oscillation is smooth and under good control. The reaction condenser on the right should have the same readings for the position when the set goes into oscillation and for when it comes out. Any lag usually indicates a wrong grid leak or an inefficient choke soil. Have a number of leaks on hand ranging from 2 to 7 megohms, and try each until the best value is found.

Connect up the antenna and with receiver on the threshold of oscillation, turn the left hand tuning condenser slowly round until a whistle is heard. This indicates a station and immediately slacken off reaction, at the same time making final adjustments on the tuning condenser. The coil used for reaction will be found by experiment, depending upon one or two factors, and no set rules can be laid down for any particular coil.

Dead Spots.

VERY often it will be found that there are certain sections on the tuning range that it is impossible to get the receiver to oscillate. These are called "dead spots," and can usually be overcome by adjustments upon the aerial coupling. Unscrew the neutralising condenser slightly, and the reaction will be found to work normally. Do not expect to tune in to Holland right away, as it takes quite a while to get used to a short-wave set, and when a station is received the builder will be surprised to see how finely the stations tune on the dials. As many as ten stations can come in on each degree, and one or two commercially made sets use a small magnifying glass in order to take more accurate dial readings.

Testing R.C. Units

RESISTERS and condensers should be tested periodically with a pair of 'phones and a 45-volt battery. A comparatively strong click should be heard in the 'phones when connecting the anode resistance in series with the battery and 'phones. A much smaller click should be heard for the grid leak and, after the first click, in the case of the condenser, no more noises should be heard. If any of these components prove faulty they should be replaced, especially the coupling condenser, which, if leaking, will give a positive potential on the grid of the following valve. This not only gives distorted signals but in time will ruin the valve, especially if it happens to be followed by either a speaker or transformer. This is the first and most likely fault that a service man looks for when called in to overhaul the set.



In his lecture to the Wellington Radio Society last week Mr. W. M. Dawson (Technical Engineer to Philips Lamps, N.Z., Ltd.) took as his subject "Pentode Amplification," treating that aspect of radio in a comprehensive yet entertaining manner. Following is a brief summary of the address.

As the reproduction of musical frequencies is bound up with the loudspeaker and the output valve it is essential that these be considered together. They should be fully capable of translating the music exactly in accordance with the strength of the electrical impulses fed to the amplifier, yet when they are delivered by the speaker they are frequently distorted, meaning by distorted minus many of the tones and overtones that give the colour, body and balance to music. The ideal reproducer will not alter the character of the signals but will deliver them as they enter the amplifier, this ideal is hard to realise, yet to a very great extent it can be attained through the careful balancing of loudspeaker and output valve.

A loudspeaker needs power to reproduce with equal intensity the range of frequencies collected from the carrier wave of the transmitting station. This power can in the ordinary speaker be derived only from the plate circuit of the output valve, and the resultant strength is proportional to the power fed into the speaker. This is the limitation to volume. Modern ideas of satisfactory volume with speakers require an amount of energy corresponding to a plate current change of 15 milliamperes. Fluctuations in plate current are fed through the coil of the loudspeaker causing variations in the magnetic field created by the energised coil. These fluctuations in density affect the tension on the reed or plate of soft iron resulting in air waves which are interpreted by the ear. The greater the changes in density the greater the strength.

A change in plate current of 15 milliamperes means a swing of $7\frac{1}{2}$ mas. above and below normal, and unless the valve is sufficient to accommodate this swing distortion occurs. The swing of $7\frac{1}{2}$ mas. must take place on the straight portion of the curve so that in practice the valve must be able to accommodate a greater swing. Disregarding the curved portion at the zero mas. end there must be room for a $7\frac{1}{2}$ mas. swing. The only three-electrode valve that can accommodate such a swing without distortion is one with a low impedance. Such a valve gives greater plate currents with a given plate voltage. By low impedance something between 2000 and 4000 ohms is understood.

To obtain the maximum transference of undistorted energy it is essential that the impedance of the output valve be no greater than half that of the speaker, and so the problem of matching arises. The impedance of a speaker, the resistance to the flow of alternating current, varies with the frequency of the cur-

rent; the higher the frequency the higher the impedance. The impedance of the valve, on the other hand, remains substantially constant at all speech frequencies. At what frequency, then, must the speaker and valve be matched? If the impedance of the speaker is 4000 ohms at 100 cycles (corresponding to a note a little more than an octave below middle C) and the valve impedance 2000 ohms, the speaker will give a good reproduction of bass notes with a falling-off in energy transfer at the high notes. If the matching is below this there will be more bass but a lack of brilliance, and the opposite is true when the matching takes place at higher frequency.

The Pentode Valve.

THE new pentode valve attacks the problem from an entirely different angle. The impedance here is anything but low; in fact, in one make it is 67,000. The valve is a special development of the screen-grid; the plate is screened by an extra grid, and this is kept at high potential by the attachment of its terminal to the high tension supply. Another extra grid is provided and is attached inside the valve to the centre of the filament. The net result of these alterations from the normal three electrode valve is to provide very high amplification, in the region of 100, combined with the necessary heavy plate current. It will be remembered that though the high amplification factor is not out of keeping with a high impedance, the ability to handle a great current output is. And this is the characteristic of the pentode.

A plate swing of 10 mas. without distortion is possible, while the impedance of the speaker is a minor consideration for what is 4000 or 8000 ohms when that of the valve is 67,000. Thus the gain in uniformity of energy transfer at all audible frequencies.

The Application of the Pentode.

THE usual method of introducing the valve into a circuit is to connect the auxiliary terminal at the side of the base to B plus, yet this is by no means the only method. In fact, the valve can be coupled so that either the high or the low frequencies are emphasised.

If the auxiliary grid is coupled to the plate terminal of the valve, it is converted into a four-element power valve with a low impedance of the order of about 4000 ohms. Coupled in this manner the tendency is to attenuate the upper registers, but to somewhat weaken the signal strength.

There is yet another method which will give prominence to the bass and that is by connecting a resistance of 5000 ohms between the auxiliary terminal and B plus and by passing this with a condenser to A minus.

The Evolution of the Valve.

THE evolution of the valve has marked the progressive stages in the application of power. When the 201 type was developed it was thought that the acme of perfection had been realised,

but in his search for more power the radio engineer was not content to rest here. Further research saw the development of the 112 and the 171, each requiring a greater plate current and delivering a greater output. Still the desire for power was unsatisfied, and push-pull amplification was devised and for some time filled the desire, but then this was superseded to some extent by the transmitting valves requiring 400 volts, for now, with the development of eliminators, there was little need to worry about the supply of input power. These valves were capable of supplying to the speaker a maximum undistorted output of 1 watt.

The pentode, capable of supplying the same output with 180 anode voltage, is displacing this as a power valve. Likewise the scramble for over-emphasis if the bass is passing, and if anything there is a reaction towards brilliance, but it has resulted in the development of apparatus capable of delivering a very wide range of frequencies.

To illustrate his points the speaker demonstrated with a simple apparatus that he claimed could be installed with a minimum of cost. A gramophone pick-up was operated and the output fed through two stages of amplification, the latter being a pentode, the filament of which was heated by alternating current. Volume and quality left nothing to be desired, and the points referring to bass and treble reproduction were clearly brought out—they needed no stretch of imagination.

"Do's and Don'ts."

HAVING finished his explanations Mr. Dawson gave a few words of advice that would help considerably in the operation of the pentode.

It is possible to generate very high voltages between the elements with 150 volts on the plate. Something in the vicinity of 550 may arise because of the alternating signals, so that to interfere with the connections while the set is in operation is simply looking for trouble. The speaker will cause a "kick back" and if the operator receives this he may feel a little "off colour" for a while. Careless treatment may result in flashover between the elements, resulting in the breakdown of the valve—they are expensive to replace.

A one-to-one output transformer is to be preferred and under no circumstances should a high step down ratio be used with ordinary loudspeakers. With some dynamic speakers the moving coil is of very low impedance, and in this case a step-down transformer is necessary, just as it is when using a triode valve. Cheap transformers might be improved by disconnecting the B plus (of the transformer) and connecting it to the filament negative, and by connecting the B plus battery to the P terminal of the valve through a 1 f. choke of 30 Henrys. Between this and the P terminal of the transformer insert a 2 mfd. condenser.

At the conclusion, Mr. Dawson answered the questions of his hearers and further elaborated some of the points.

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Short-wave Jottings

DURING the week our shortwave correspondent, Mr. Sellens, has made the following observations:—

Radio Vitus, Paris, now broadcasts its daily concerts simultaneously on 322 metres and 41 metres, the latter with a power of 150 watts in the aerial. In the meantime, the Radio LL transmissions on 61 metres have been suspended.

1AX, an amateur transmitter at Rome, frequently relays the programme of the local station on 45 metres.

The telephone service between Berne and Buenos Aires, via Berlin, a distance of 7200 miles, will soon be officially opened. Three-minute conversations will cost about £5. Tests of the shortwave wireless service between a Berlin station and Bangkok in Siam, have been satisfactorily carried out.

The new Vienna shortwave experimental station now under construction, will shortly carry out its initial test on 49.4 metres.

Listeners in New Zealand and Australia should have no difficulty in tuning in China during the winter months. It is learned from Peking that seven new shortwave stations are to be erected, some of which should be on the air within a month. The wavelength on which the stations will operate is not yet available.

Two hundred kilowatts will be the power used by the new German radio station to be erected shortly, the idea being to make the Berlin programmes receivable throughout Europe.

Rome also is to erect a high-powered station. Work on the necessary building and equipment for a 50-kilowatt station is already under way, and it is thought that it will be in operation by October. A shortwave beam transmitter is also being installed to make the programmes available to Italian listeners in Australia and America.

The call of the new shortwave transmitter at Huizen (Holland) is sent out in several languages, including Dutch, English, German, French and Spanish.

Test transmissions are being carried out between midday and 3 p.m. (11.30 p.m. till 2.30 a.m. New Zealand time), the most favourable time for reception of its broadcasts in the Dutch East Indies. The wavelength is 16.88 metres.

Following is my log for the week:—

Saturday, April 13.

AT 5.15 a.m. talk was heard from W6XN (KGO), in reference to interior decoration. This would be a section of the "Californian Home Life" hour. The song "Twilight" followed. R3-4 very clear, but severe fading. TLO, Nairobi, carrier wave only heard.

PCJ commenced at 6.35 a.m.: R9, perfect reception, but suddenly went off the air, and were not on again till just after 6 a.m., when they put on the same record again as at first. The programme continued to 7.30 a.m., with but little decrease in volume. 5SW, Big Ben at 6.30 a.m., followed by a talk on "Music"; R8, 100 per cent. readable.

2XAD was R5 at 1.45 p.m., with a slight surge. During their "Half-hours with the Senate," the Assistant Secretary of Agriculture was heard speaking at Washington. This was also broadcast through KDKA. "Slumber Hour" was the title of 2XAD's last hour's music. Strength was R8 during the greater part of the time heard.

KDKA was heard with good volume but unsteady, so I did not listen much to them.

Two stations were heard between 31.4 metres and 32 metres, but were too weak to identify. They have since proved to be 2XG, Rocky Point, N.Y., and a London station, call not yet heard.

PCJ were first heard at 2 p.m. at R3, calling America and Canada. Signals increased to R8 by 3.30 p.m. CJRX, Canada, was transmitting, but morse QRM spoilt reception. Either PCJ on 18.4 metres or PLG on 18.88 metres was R8 at 11 p.m. with records. Quite good, but call not heard.

Sunday, April 14.

ON the 80-metre band ZL2BO was well received during the morning. At 11.10 a.m. on about 26 metres a voice was heard calling "Hullo, Nauen," several times, and then changed over to code.

Both KDKA and 2XAF were just audible at 11 a.m. KDKA was R4 at 1.30 p.m. with a musical programme, which was followed by the weather report and messages to the Byrd Expedition. The parents of the Boy Scout with the expedition spoke to their son in the Antarctic. Strength R9.

2XAF and 2XAD were both on the air with the programme from WGY. The "Lucky Strike" hour was heard, and later music from the Crystal Room of the De Witzler Hotel, Albany, N.Y.

KDKA and VK2ME were conducting a short duplex telephony test when I tuned in at 7 p.m. Both were R9. RFM was R8 later in the evening.

Monday, April 15.

VK3ME, Melbourne, opened at 6.27 a.m., and passed over to 3LO for their weekly programme. Reception was good at R9. RFM was much weaker than usual during the evening.

Tuesday, April 16.

5SW DUPLEX telephony, with 2XO, were R9 and 100 per cent. readable at 5.20 a.m. 2XO were not audible direct, but at times through the English station. TLO, Nairobi, was just audible at 5.45 a.m., and but little better at 6.25 a.m.

PLE, at 6 a.m., were R2-3, with duplex telephony. A lady was talking. She was still there at 7 a.m. at R5, and would have been 100 per cent. readable if English was spoken. 5SW, Big Ben and London calling, was R8, but intelligibility was bad on account of rapid fading. PH1, Huizen, Holland, were testing from 4.30 a.m. till 11.30 a.m. Nothing was heard before 6.15 a.m., when a weak carrier was audible.

PLF was heard at 10.45 p.m. calling "Hullo," and "Sehtung," volume R5.

Wednesday, April 17.

THE 40-metre German (DOR ?), speaking very slow and distinct at R9. TLO, Nairobi was R1-2. 5SW opened at 6.27 a.m. 6.30 a.m., Big Ben was extra loud. Lord Burnham, chairman of the Press Association, gave a talk on "Printing." This was easy 100 per cent. readable, being the clearest speech heard from England for some time. "Gardening" was the subject of another talk later. An orchestra was well received at 7.20 a.m.

W6XN (KGO) were tuned in at 5.50 p.m., when it was announced that the Rovers would entertain. This they did till 6.30 p.m. Reception was excellent at fully R9, except for severe fading at times. A gong was struck at 11.1 p.m., Pacific standard time. After giving the next day's programme the station closed down at 11.3 p.m. P.S.T.—6.33 p.m. here. PLF was heard at 10.30 p.m. with duplex telephony at R8.

2XAF was picked up at 10.45 p.m., playing records at R9. This is an unusual hour to hear an American, it being 6.15 a.m. in New York.

Thursday, April 18.

A DUTCH (?) station, probab. PLE, was on duplex at R 2-3, increasing later. 5SW: Big Ben at 6.30 a.m. was R8. Sir William — spoke about the Imperial Institute. This speaker was much clearer than the announcer. The works of Michael Angelo were the subject of a later talk. At 8.35 p.m. 2XG was heard on one of his word tests, "write down apricot," etc., on about 32 metres.

W6XN (KGO) was R2-3 at 6 a.m. Talk was not readable, but the voice is familiar.

Friday, April 19.

AT 5.20 a.m. 5SW was R8, but with a rapid fade, duplex test with 2XO.

PCJ commenced at 5.37 a.m., R8, very clear and steady, decreasing to R5-6 at 7.30 a.m.

TLO, Nairobi: Carrier only.

40-metre German, R8, with his usual slow talk. Music from this station should be worth listening to as he is so clear and steady always.

5SW: Big Ben, R8. "Miss — will give her fortnightly talk on recent novels" was announced. This lady could be followed easily in her talk.

At 10.15 p.m. on about 16.4 metres was heard calling, "Hullo, here is Bandoeng." Music also was heard. PLF was calling "Hullo—Bandoeng."

2XAF at 10.30 p.m. said, "Good morning, ladies and gentlemen, and when I say good morning I mean good morning. It is now 6 a.m. in Schneetady. A

special programme will be given in honour of the radio festival at Melbourne." A march by Sousa was the first item received at fully R9.

The announcer in speaking again appeared to be much amused at rising early to put on a programme at 6 a.m. to be received in Melbourne at 9 p.m. the same day.

To prove that an orchestra was in the studio and that they were not using records, he called for, and three hearty cheers were given by what seemed quite a crowd. Much laughing was also heard. Later Mr. Roy Sheppard spoke to his friends in Melbourne. He mentioned that there was a foot of snow in Schneetady.

Summertime comes into effect in Great Britain on Sunday, April 21.

It will therefore mean that 5SW will be heard one hour earlier after this date. I am not certain, but believe that America observe summertime one week later.

Schedule for PHI

PHILIPS Lamps (N.Z.), Limited, Wellington, have received advice that the new station PHI, working on a power of 75 kilowatts, a wave-length of 16.88 metres at Huizen, Holland, will be operating at the N.Z. following times:—

Tuesday: 4.30 a.m. to 11.30 a.m.

Wednesday: 11.30 p.m. to 3.30 a.m.

Thursday: 11.30 p.m. to 3.30 a.m.

Friday: 11.30 p.m. to 3.30 a.m.

Saturday: 4.30 p.m. to 11.30 p.m.

Philips Lamps, Ltd. (Wellington), will be very glad to receive advice of reception from listeners throughout New Zealand.

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