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Outstanding Appreciation of Maori Pageant

IN our last week's issue we indicated the outstanding success of the celebration arranged by 2YA in connection with the 88th anniversary of the Treaty of Waitangi, and prophesied that there would be a chorus of general approval from listeners throughout the country and overseas.

The tide of approbation from listeners duly rose and not only 2YA, but the other stations which successfully rebroadcast its programme, are receiving sheaves of letters expressing appreciation of the variety and melody embodied in the evening's programme. The occasion, and the unique nature of the celebration, was recognised by the Press as being worthy of note, and some generous and appreciative reports appeared. It was apparent to listeners that the programme, as organised, had a serious side, and aimed to inform as well as to

ing re national honour, etc., relating to the Treaty, but the many who are late comers among us know nothing concerning those anxious days of Governor Hobson, when the welding together of Pakeha and Maori ideals required high-class statesmanship." Numerous other appreciative letters have been received and are summarised elsewhere.

THE studio of 2YA, after the conclusion of the second evening's broadcast on the night of February 7-8, was the scene of a very pleasant little gathering between the members of the Maori party and the Prime Minister, the Hon. Sir Maui Pomare, and officials of the Broadcasting Company. To commemorate the occasion, the group of the Maori party, with members of the quartet and the two speechmakers of the evening was photographed by flashlight.

Mr. Hamiora Hakopa, who had taken the leading part in the explanatory speeches of the programme, said that the members of his party felt that they could not allow the occasion to pass without speci-

greater pride in holding the portfolio of Minister of Native Affairs. In the conduct of matters relating to the Maori race, Cabinet received great assistance from the Hon. Sir Maui Pomare, representing the Native race. He at all times was ready to help, advise and interpret the wishes of the Maori people.

Mr. R. Ritchie, as joint organiser of the Maori Entertainers, with Mr. H. Mete Kingi, called for cheers for the Prime Minister and Sir Maui Pomare, which were lustily given.

THE appreciation of the party for the special hospitality extended to them by Mr. A. R. Harris, General Manager of the Radio Broadcasting Co., was next eloquently expressed by Mr. Hamiora Hakopa. They could not let the occasion pass, he said, without asking his acceptance of a souvenir of the occasion. He accordingly asked Miss Mangu Tahana to hand to Mr. Harris a gold and ribbon albert, suitably inscribed, with a Maori carved greenstone tiki pendant.



Flashlight photograph of the Wanganui Maori Party which, on Monday and Tuesday evening, February 6 and 7, broadcast from 2YA, Wellington, a special programme in commemoration of the eighty-eighth anniversary of the signing of the Treaty of Waitangi. The Prime Minister, the Rt. Hon. J. G. Coates, and the Hon. Sir Maui Pomare took a special interest in this historic commemoration. Standing (from left)—Mr Morgan (of string quartet), Mangu Tahana, Mr. C. Drummond (announcer), Miss Ava Symons, Mrs. E. Meier, Mr. Geo. Ellwood (leader of the Symons-Ellwood string quartet), Tona Potae, Tai Whananga, Hamiora Hakopa, Tenga Takarangi, Ope Whanarere, Korako Takarangi, Tira Raotu, Hori Kawan, Takiara Potaka, Henare Poananga, L.L.B., R. Ritchie, Herewini Mete Kingi. Sitting on chairs—Morehu Perepe, Rt. Hon. J. G. Coates, Prime Minister, Hon. Sir Maui Pomare. On Floor—Kahu Rawhiti, Ka Winiaata, Rangi Takarangi, Roka Kawan, Rai na Kahukura, Tari Ihaka, Tango Ihaka, Mei Perepe.—L. Wallace Photo.

entertain, in this respect fulfilling the ideal of the company of providing the informative entertainment.

While some New Zealanders born and bred in the country have a working knowledge of our history, that knowledge may, in many other cases, be classified as hazy. Newcomers to our shores are, in the main, frankly ignorant of the stirring romance that does hinge around the early stages of our development. The value of such an entertainment as was provided by the commemoration programme in informing, while entertaining, has received a certain amount of recognition. This feature was ably emphasised by a correspondent in the following terms: "As a New Zealander and returned soldier, I desire to express profound appreciation of the broadcast by Station 2YA of the concert relating to the Treaty of Waitangi. The broadcasting of such matter has enormous educational value. Not that our Southern Cross breed of British stock requires any attacking or defend-

ally thanking the Prime Minister for the courtesy with which he had met them and for the honour he had bestowed upon them by associating himself with their programme and attending on the second evening, even at such a late hour, for the special benefit of overseas reception. The party also appreciated the tone of the speech made by the Prime Minister in relation to the Treaty of Waitangi, and the assurance in it of the Prime Minister's interest in their race. The party also appreciated the attendance and courtesy extended to them by Sir Maui Pomare.

Mr. Coates, who responded in a very feeling speech, assured the party that all matters affecting the welfare of the Maori race were of special concern to him. He recalled his own boyhood's days spent in a district which had close contact with the Maori race, and said that he would always remember the outstanding courtesy and kindness extended to his pioneer father and mother and himself by the Maoris, with whom they were then in contact. Because of that the Maori race carried his undying gratitude, and in point of fact, although he was Prime Minister of New Zealand, he felt

In acknowledging the presentation, which quite took him by surprise, Mr. Harris heartily complimented the performers on their splendid entertainment, which had proved so appropriate for so historic an occasion. He was specially glad to have enabled the people of New Zealand, through the medium of broadcasting, to have appreciated at first hand the outstanding melody and harmony of the Native songs and singers. He felt sure that the broadcast would be widely appreciated and serve to enlarge the appreciation by the general populace of the dignity and capacity of the Maori race. The whole performance had been characterised by close co-operation between the Maori party and the members of the Broadcasting Company's staff, and that co-operation had undoubtedly contributed to the harmony with which the programme had been completed.

The opportunity was taken, during the stay of the Maori party in Wellington, to convey them to all places of interest around Wellington. In addition to a sight-seeing tour, they were entertained by Sir Maui Pomare at his residence at Western Hutt.

The Progress and Position of Broadcasting

An Analysis of Criticism and an Outline of Social Service



THE appeal of broadcasting to the emotional side of individuals naturally renders the subject of programme criticism so diffuse as to be difficult of analysis, but there are certain broadly defined categories into which our critics fall, although the exceptions to each almost disprove the rule. Covering all these there are to be found some simple psychological manifestations which emerge constantly: hardly ever does a critic admit in so many words that he is expressing his own views only. One will speak on behalf of his whole circle of wireless friends; another for the overwhelming majority of listeners in his vicinity; others—yet more confident—voice the views of anything from 90 to 99 per cent. of the entire audience. The latter is a very favourite percentage and is applicable impartially to any type of matter broadcast. There is, again, the impression that anything particularly disliked predominates. To those to whom dance music is anathema it appears to be broadcast in every programme. A listener who does not care for talks cannot switch on without finding one in progress, and another who longs for variety entertainment is utterly bewildered at the interminable transmissions of symphony concerts. Allowance is made for an element of the exaggeration of vexation in this, but much is written in perfectly good faith, and many a correspondent has retracted his words when his complaint has been answered. This leads us to one of the best characteristics of listeners—they are so ready to retract what has been written in a moment of disappointment or irritation, and before they have had an opportunity of considering the other side of the case. Very few, indeed, of the critics

A very interesting and informative analysis of the criticisms levelled against the British broadcasting programmes and a tribute to the real service which broadcasting is rendering is contained in the Handbook recently issued by the British Broadcasting Corporation. This article has much in it that is applicable to New Zealand. Readers in particular, will, we think, appreciate and enjoy the outline given of the service broadcasting is rendering in increasingly widening the circle of musical taste and enjoyment and providing a foundation for the development of a fuller cultural life. The future of music, under the stimulus of broadcasting, is thus brighter than ever.

really intend to be rude or cross. Many do not even pretend to be, and write with a sincere desire to help in the improvement of the service. Their knowledge of the conditions under which it is carried on is sometimes insufficient to enable them to frame practicable suggestions, but the B.B.C. has not infrequently benefited by honestly constructive criticism, which is always welcome to us.

TYPES OF CORRESPONDENTS.

It must not be presumed that the atmosphere of Savoy Hill is one of unbroken peace, nor that every listener who has a bone to pick with the programme does so without showing his teeth. It is not always easy to placate the correspondent who calls everything that he does not like or understand "piffle," and all that really does appeal to him, "not half good enough," and the feelings of some critics can never be allayed. There is a respectable gentleman living in a respectable suburb of a respectable town who does not permit his daughters to hear love songs or dance music. He, it is feared, will never again look leniently upon the B.B.C. And the aunt (real) who was almost sure she heard one of her clan say "Botheration!" in the Children's Hour "one day last week," has doubtless already carried out her intention of demanding the return of her licence money. In such matters defeat is regretfully acknowledged.

THE INCORRIGIBLES.

A very curious type of critic exists, fortunately in small numbers. He generally possesses a super-something

set with innumerable valves, purchased at incredible cost, but its use imbues him with a feeling of dislike of everything broadcast, and a personal antipathy to all connected with the service. He is a most regular listener, and delivers himself at frequent intervals of letters, in which he points out that the B.B.C. is, beyond doubt, a hotbed of incompetence and drivell. It is not quite certain whether such listeners derive pleasure or pain from their reception and correspondence. They never express the former, so the B.B.C. is usually inclined to rank them, with due admiration and honour, among the martyrs. "I hope your face is getting red with temper as you read this," wrote one of the incorrigibles recently. It wasn't, but a terrible mental picture of the writer was being formed.

There is no need to devote much space to the anonymous critic who scribbles, "Your programmes are ROT-TERN," on a letter-card, and furtively drops it into a letter-box round the next corner but one. In fact, he is believed to be a lineal descendant of the small boy who chalked "No Pongery" on the door, and ran away, so we do not take him seriously. Anonymous correspondents are so shockingly wasteful of time, stationery, and postage.

Taking the subject of these notes as a whole, however, there is only one real complaint, and that is that there is not enough of it. This does not mean that programmes are put out for the purpose of arousing adverse comment, but where a public service such as ours works unseen, there must be innumerable listeners who are puzzled as to why seemingly incomprehensible things are done when a straight and simple path seems to be ahead. It is too much to expect them all to take it on faith that the sole purpose of the B.B.C. is to broadcast acceptable programmes in an acceptable manner, and doubts or perplexities may sometimes engender a spirit of suspicion and resentment which need not arise at all. Let such listeners present their problems, and they may be certain that they will receive sympathetic individual attention, and, moreover, that the opinions they may express will be definitely recorded in that register which is so helpful in the appraisement of the public taste.

BROADCASTING AND MUSIC.

The advent of the gramophone has done a great deal for music, particularly since, in recent years, the leading companies have realised their responsibilities and provided a tremendous library of first-rate music at a moderate price. It was the more significant because it brought to the fore, for the first time, music which could previously be heard only by comparatively few people privileged to attend first-rate performances, as by a fine orchestra, under a great conductor, or, perhaps, a unique artist performing once only on a flying visit to this country. It is true that there had been introduced on a small scale the electrophone, a device for allowing people to listen at home to a concert received by microphone in a hall or theatre and transmitted by wires, like telephone lines, to the house; but a microphone efficient for this type of work had still to be invented, and the results were not sufficiently attractive to guarantee the commercial success of the scheme. The piano, too, had begun to make its way in this country, and has already done its similar share in spreading the gospel of good music.

Then came broadcasting—that magical agent that has made available, by means of comparatively simple apparatus, and at next to no cost, the finest things there are to hear in music. It annihilates distance. No longer is the promenade concert available only to Londoners, the Halle concerts to Mancunians, the Baptist Philharmonic to inhabitants of that city, and the Scottish Orchestra to those living in Glasgow. The shepherd on the downs or the lonely crofter in the farthest Hebrides, and, what is equally important, the labourer in his squalid tenement in our but too familiar slums, or the lonely invalid on her monotonous couch, may all in spirit sit side by side with the patrons of the stalls and hear some of the best performances in the world. Not only this. Broadcasting has brought into the lives of millions such as these the ever-flowing stream of music performed with sociable intimacy in the studio, the interesting series of talks, not only on music, but on every conceivable subject by the greatest authorities known, whether they be explorers, scientists, or professional and business men and women; famous poets reading their own works, and dramas from Marlowe and Shakespeares down to the present day, and including, not only many standard works, but, in addition, new plays specially written for the wireless medium.

TRUE DEMOCRATISATION OF MUSIC.

The effects of the understanding of music must already have been profound. Literally, millions of people have heard, for the first time in their lives,

the simple, youthful, and sparkling quartets by Papa Haydn and the elegant Mozart, and the joyful early quartets of Beethoven, and realised that therein lies a wealth of melody undreamed of, of rhythms that incite the toe to tap as well as any reel or fox-trot. Sir Walford Davies's homely talks, illustrated by his ever nimble fingers, have awakened the unsuspected interest in the way music is made. Hosts of bright, impressionable children, whose music had consisted mainly of snatches of music-hall ditties inflicted by itinerant execrations in the bar entrance, or sobs of the worst type of sentimental slop played in the local cinema at the weekly "tuppenny" Saturday performances, have heard nightly over the broadcast such music as must have had a great and good influence on the sensitive unfolding mind.

Thousands of people, who have previously regarded the military band solely as the vehicle of a limited repertoire of noisy, banal music, discover that it can sound even more attractive playing a dignified, refined programme of stuff that proves its worth by unresented repetition.

THE FUTURE OF MUSIC.

The effect of broadcasting on music itself—what will it be? This is a question which cannot be answered. The growth of discrimination among the listening masses must already be tending to discourage to some extent the production of poor quality, and to encourage better, healthier music. It is improving the standard of performance beyond measure, and this is all for the good of music itself. One sees with satisfaction that accepted masterpieces in music—symphonies, for instance, of Beethoven, Mozart, Haydn—are yet more firmly established by their increased performance and hearing over radio. Music is of the stuff of immortality; in the finest written music there is this quality, and it cannot, surely, be changed. What is certain is that masterpieces themselves will be recognised as such sooner than ever before, firstly, because of the desire of the broadcasting authorities to give performance to new and sincere work, to afford the fellow-countrymen of the composer an opportunity to hear it, and secondly, because of the increasingly receptive and understanding mind of the average listener.

Broadcasting, in short, is the greatest ally that the divine muse has ever had on earth. It is the final step on the democratisation of music that perhaps had its beginnings in a community sing-song among missing links in a primeval forest—who knows?

Those pessimists who insist that in making the concert available to the public by broadcasting one greatly reduces the box office takings, must find it hard to sustain their arguments against such evidence as the attendance at the "proms" this year (1927), where almost every night not a seat has been unbought, and queues of would-be promenaders have been turned empty away. Many similar cases may be quoted from broadcasting history during the last few years. Even allowing for the fact that at first many people came for the novelty of seeing a microphone, or that publicity such as was given early in 1927 to "the impending doom of the Queen's Hall and of the 'Proms'" doubtless has accounted for a certain amount of hall attendance, there is no real cause for thinking that broadcasting has affected concerts

as badly as some would have us believe. On the contrary, we are convinced that broadcasting has created a great field of potential concert audiences—people who, until their interest was awakened by radio in music, would never have dreamed of going to a symphony concert, but who soon (if they are not now) will be among the most zealous of regular attenders at the Queen's Hall and elsewhere.

INFLUENCE OF THE MUSIC TRADE.

It is appropriate here to mention the influence of radio upon the music trade. The branches of it which have benefited most have undoubtedly been the gramophone industry, and the publishing of very light, e.g., syncopated music. This was most noticeable first in the case of the Savoy Band's transmissions, and the enormous demand for records of these orchestras. It applies also, to a less extent, to records of classical music: the growing interest in, and the desire for, better music have had a definite reaction indicated by the increasing demand for this class of record. The music publishing and instrument trades are passing now through a period of depression, and it is not fair to lay the blame entirely at the door of the poor scapegoat—broadcasting. There are many causes partly responsible—the general trade depression, owing to a present comparative lack of ready money, and the introduction of the "hire purchase" principle in many other lines, e.g., the automobile, are perhaps the chief.

BROADCASTING AND THE AMATEUR.

This a reflection of the temporary effect upon amateur are of the introduction into homes, upon a huge scale, of music played well. People—many of them, at any rate, are discouraged from trying to make music for themselves. There will be a reaction, the cumulative effect of increasing appreciation of music itself, and eventually these people will return to their pianos, their violins, their singing, with renewed energy and interest. What is good to believe, too, is that they will then try, not to smash out Rachmaninoff's "Prelude" as it was done at the local concert last night, but to play musically and joyfully the delightful little Bach movement they heard at 7.15 to-night on the wireless; not to imitate this unrefined, unphrased, unmusical noise of the prima donna singing bad English songs at the Royal Albert Hall, but the restrained, musical singing by a good radio artist of some good (though still tuneless) English songs.

The attitude of the B.B.C. to amateur art is entirely one of encouragement. It is always agreeable to consider choral and orchestral societies' performances with a view to relay them by microphone, on condition that the performance given is of such a standard as to provide something of definite programme value. This attitude is shown by the happy relations existing between the corporation and the Federation of Music Festivals, with whose interest and activities it is entirely in sympathy, and by its co-operation with community singing and similar organisations.

The importance of the Watts governor in controlling the steam engine finds a counterpart in the quartz crystal as a device for governing the frequency or wavelength of a broadcasting station. The recently appointed American Federal Radio Commission, in discovering that nearly one-half of the broadcasting stations are straying from their assigned frequencies, is accepting this thin cleavage of crystal as an arbiter of disputes and as an eliminator of interference in broadcast reception.

ON THE AIR

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Further Points on the Static Problem

Graphic Explanation of Various Phenomena

By "M.I.R.E."



IN continuance of a discussion relative to methods available for the reduction of static interference with radio reception, there are several considerations worthy of mention in view of the fact that they are simply explained and especially because there are points easily understood by the average user of certain types of receiving apparatus which are capable of developing the particular symptoms about to be described.

As the readers of the last two issues of this column will understand, the most effective method of reducing static, or in other words increasing the signal to static ratio in favour of signal, is to use an aerial capable of receiving only in the direction of the incoming signals and to be non-receptive in the direction of the static, static being aether waves just as the signals are, of course, if the static and the signals are both arriving from the same point of the compass, this method of sorting the one from the other fails entirely.

It has been demonstrated that an L type aerial of special design will assist materially under certain circumstances, and in view of the fact that an aerial with a very small electrical height will be quite effective in driving a multi-valve set, this is the most popular method where distant signals are aimed at, and the one it is advised should be attempted seriously.

THE LOOP PICK-UP.

THE simplest directional pick-up is the loop. As is well known, the loop consists of a frame-work or "former" on which is wound a coil of wire. This wire may be wound in the form of a spider-web in such a manner that each successive turn has a different diameter, that is, one turn inside the other, or it may be wound with the wires lying side by side and each turn having the same diameter. All designs of loops are made, so that the whole frame-work can be rotated, and the coil of wire caused to point in such a direction as to bring in the loudest signals. When rotating the loop it will be found that there are two places 180 degrees apart where the signals rise

to a maximum, and under certain circumstances, of these two positions, one will be found to give somewhat better results than the other. Theoretically the two positions should give equal results, and the reason why they invariably do not is due to well-known effects, which will be dealt with later.

Without indulging in involved technicalities as to why a loop "points" towards the direction of the incoming signals, it may be stated that this action is based on the fact that a loop is responsive to the magnetic effect of the incoming ether waves, in contradistinction to the action of an orthodox aerial, which is responsive to the "electro-static" component of the waves, and is responsive at almost any angle. However, the net result is as previously described, and the loop indicates two possible directions, diametrically opposite one another, from which the signals may be arriving. For navigational purposes it is necessary to find which is which, unless the bearings are so well-known that obviously one of them is the correct one. In order to find out which is which, or decide the "sense" of the signals, auxiliary apparatus is used and two readings taken, but this is of no interest from the point of view of static reduction.

INTERESTING FACTS.

IT is of interest in attempting a simple understanding of these phenomena, to lay the facts out graphically. If two circles of the same diameter are drawn in such a way that they are touching one another on their circumferences, it will be seen that a figure 8 has been drawn. Now, if the point where the circles touch is taken as the centre, and two lines are drawn at right-angles, one cutting the two circles in two, the points of the compass, north, south, east, and west, may be marked on the straight lines, such that they form a standard graphical representation of a compass. The circles now represent signal strength with respect to direction, and if, in the case of the graph just described, the loop is pointing north and south, and responding to signals coming from a northerly or southerly direction, it will be noticed

that nothing is received from an easterly or westerly direction. If it is desired to receive signals from either of the latter directions, then, of course, the loop is pointed accordingly, and a rearrangement of the figure takes the form of two similar circles drawn with their edges touching at the same spot as before, but their centres are now along the easterly and westerly lines. The lines of zero reception are now north and south. It follows, therefore, that rotation of the receiving loop requires a similar movement of the circles round the graphical points of the compass in order to describe what is happening.

A loop is said to have "Figure of Eight" reception, because of this just-described performance.

Now, it has been shown in previous discussions in this column that a T aerial receives equalling well all round the compass. If a diagram of such a performance is drawn, a circle will have to be described, having its centre where the two lines and the edges of the "figure of 8" circles, all had a common point of contact. Obviously this circle denotes equal signal strength at a central point from a portable station moving in a circle round that point. A T aerial is therefore said to have "Circle" reception.

"OVAL" RECEPTION.

AN L aerial, by the same reasoning, will have "oval" reception, but more of the oval will be towards the direction in which the down-leads come down. It is unnecessary to point out that unless the L aerial is of the type described in last week's issue, that is, exceptionally long with respect to height, the oval will not be very narrow nor will it be definitely located more in one direction than the one immediately opposite, as it would have to be to represent definite directivity. Furthermore, if the aerial is moored in one position the oval diagram will always be a fixed representation so far as a graphical picture is concerned.

An interesting effect is now available for description. A loop also acts as a miniature aerial because it is sticking up in the air a good distance in some cases. The receiver, batteries, and leads,

etc., act as a counterpoise or earth connection (in many cases no doubt an earth connection is in use). This little aerial system picks up a surprising signal strength, and it represents "circle" reception. In adding it to the graph a small circle is drawn over the "figure of 8." It will be at once seen that there are two bulges which represent a leakage of signals (or static, which is what is most undesired) into the system from the two directions which received nothing before. Also, if the graph is solved mathematically it will be seen that part of the little circle adds to the big circle, but the other subtracts, and the net result of this is to enlarge one of the circles forming this figure of 8, and to diminish the size of the other. Thus it is seen that it is this effect which causes the loop to show a somewhat greater signal strength in one of the two positions at which it is receptive.

COMBINING THE SIGNALS.

ADVANTAGE is taken of this effect to further improve the fight against static by reducing the size of one of the circles, and this is done by deliberately combining the signals obtained from a loop and an aerial. It is necessary to "phase" the effects from the aerial in order to adjust the signal strength to be the same as that obtained from the loop in order that the size of the "circle" due to the signals from the aerial will have a radius equal to the diameter of one of the circles of the figure of 8 it is combined with. This is done by inserting a nameable resistance of several hundred ohms (this will vary according to wave-length) in series with the aerial. The effects of aerial and loop are combined by feeding a common secondary attached to the receiver from the primaries, one being in the loop circuit and one in the aerial circuit. Actually the diagram of reception obtained by combining circle with figure of 8 reception is a figure exactly the same as a heart. Such a combination is called "heart-shape" reception. The core of the heart is the centre and the heart revolves with the loop, and the pick-up of the combination is that of the loop and aerial added together. By drawing a diagram of a heart on a compass, as was done previously, it will be seen that sig-

nals (or static) can only come in from one direction, and this single direction is regulable by simply rotating the loop. Of course, owing to the series resistance in the aerial circuit (and this resistance, by the way, must be non-inductive) the aerial will not give its normal impetus to the receiver, but will deliver the same signal strength as the loop when "phased" correctly, and this means that the total pick-up of the system will be twice that obtainable from the loop.

RESULT OF RE-RADIATION.

SIGHT should not be lost of the fact mentioned in a previous article that re-radiation of signals from metallic or other objects in the vicinity of the receiver will cause loss of definition of direction, and that the shorter the wavelength being received, the more indefinite will become the direction. On standard broadcast wavelengths, however, the effect is quite marked, and very considerable relief may be obtained from both static and induction. This effect of re-radiation is most noticeable if a loop set is in operation near to an aerial, and even if the aerial is out of commission by being disconnected from a receiver or even earthed through a resistance to damp it, it will invariably be found that the maximum signals will be available when the loop is pointing to the aerial, and this direction may be at right angles to the true direction of the transmitter.

A very simple method of getting a crude but effective "heart shape" is to join the aerial lead on to the loop either directly, through a series fixed condenser, or by just laying the wire over the loop or receiver. There should be no earth connection from the receiver. Under these circumstances the loop will be energised by the aerial, and will give wonderful signal strength. There will still be two positions on the loop where signals will come in, but one will not be as definite as the other. Under circumstances of bad static, reception will often be found possible under these circumstances, whereas with the aerial direct there will be nothing but clutter and on the loop alone. The strength will be too small for comfortable reception.

BATTERY ELIMINATORS

SUCCESSFUL DEVELOPMENTS.

One of the chief technical developments which has been made in the construction of wireless receivers in the last year has been the steady improvement in equipment to enable the set to be worked from the electric supply mains. For some years an eliminator for the high-tension battery has been on the market, but early types of high-tension battery eliminators lacked the flexibility of a high-tension battery, and as they were also rather expensive they were very little used. Many improvements in detail have now made a battery eliminator a far more satisfactory source of high-tension supply for a large receiver than a high-tension battery, and the chief fault with the early models—a tendency for some of the hum or ripple of the electric supply service to make its way into the receiver when a heavy current was drawn from the eliminator—has now been entirely overcome. Prices of completed eliminators are still high—higher, in fact, than they should be in proportion to the cost of other wireless equipment, but so wide a range of moderately-priced eliminator parts is available that a person can assemble one of these units at home at a reasonable outlay.

"A" BATTERY ELIMINATED.

From a technical point of view the progress made in the elimination of the low-tension, or A, battery has been more interesting than the development of the high-tension eliminator. Comparatively little difficulty is experienced in rectifying and smoothing out into a direct current the alternating current having the necessary characteristic for high-tension supply, because the intensity of the current necessary is very small. The opposite, however, applies to a current for filament lighting. Because the necessary pressure is low it is difficult to produce an efficient rectifier for converting the current for filament supply from an alternating to a direct current, and because the necessary current intensity is comparatively high an efficient rectifier would need to be bulky and expensive. These difficulties have been so great that except in one or two special cases the attempt to rectify and smooth an alternating current for filament supply has been abandoned, and attention has been concentrated on the application of an alternating current supply direct to the valve without introducing into the receiver the hum of the alternating current supply. Many different kinds of valves have been produced in the last year which will work effectively from alternating current. These valves differ materially from ordinary valves, because the filament pro-

per is surrounded closely by a sheath of very light metal which is not in electrical connection with the filament. The grid and the plate of the valve are placed outside this metal sheath. The filament, which is heated from a small transformer working from the electric supply mains, plays the part of a radiator, which heats the sheath surrounding it to a very dull red heat. This sheath is treated with the energising material used in dull emitter valve filaments, and when heated in this manner it takes the place of an ordinary filament. By the use of this arrangement the alternating current supply is used to do the necessary heating work in the valve without being actually connected into the receiving circuit proper, and it cannot interfere with the ordinary working of the set.

LOUDSPEAKER CORDS

SOURCES OF TROUBLE.

The loudspeaker cord is such an insignificant part of the wireless set that few ever give it any consideration. Yet it is sometimes the cause of much crackling, which many imagine to be static. Speaker cords are made of very fine copper wire, twisted with a piece of cotton thread. The whole assembly is covered by a woven cotton or silk braid.

Sometimes one of these minute wires will become broken, and any movement of the cords will cause a scratching sound in the speaker or 'phones. Such a noise will be located when the 'phones are shaken.

During damp and rainy weather, or around the sea shores, the fibre covering the conductors may become moist and leaky and cause noises in the speaker. This trouble is harder to find, for if we check the parts of the set with the speaker connected,

as the noise will still be prevalent, it is likely to be assumed that it is caused by static.

As a protection against such trouble, a speaker cord with rubber insulation should be used.

Grasping a 'phone cord and not the 'phone tip when withdrawing it from a plug will often cause scoring of the delicate wire, with consequent breakage and noises in the set. By

connecting a small lamp in series with the 'phones or loudspeaker, and a small dry cell, flickering of the light will occur when the cords are moved around in the case of a broken wire.

If you are troubled with hand capacity effects in the 'phone or loudspeaker cords, a small fixed condenser connected between A positive and a separate earth will either eliminate or minimise the trouble.

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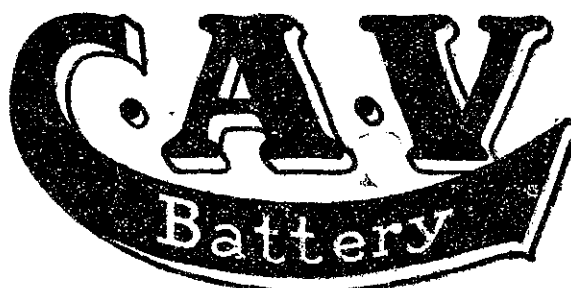
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In short "a job"!

You get them from:

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Good Quality

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Are the Backbone of a
RADIO SET.

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Here's two that will save you endless trouble and expense.

Type Tw 13-plate, 85 amps. capacity, fully charged. Complete with removable carrying handle.

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THE BATTERY PEOPLE.

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Telephone 20-937.

WELLINGTON.

THE NEW ZEALAND Radio Record

PUBLISHED WEEKLY.

Printed Tuesdays to permit of effective distribution before the week-end, with full copyrighted programmes for the succeeding week. Nominal date of publication Friday.

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Advertisements requiring setting should be in hand not later than Friday of each week to ensure publication in succeeding issue. Stereos and blocks, providing space has been arranged beforehand, can be accepted up to midnight Monday. Contract advertisements not changed will be repeated.

No responsibility is accepted for blocks, stereos, etc., remaining unclaimed after last use, beyond a period of three months.

A. J. HEIGHWAY,

Managing Editor,

"The N.Z. Radio Record,"

P.O. Box 1032.

Dominion Buildings, Mercer Street, Wellington.

WELLINGTON, FRIDAY, FEBRUARY 17.

LESSON OF THE MAORI PAGEANT.

What impresses us most about the Maori pageant and the brilliant success won by the artistic and balanced programme presented thereat is the effectiveness of the medium of broadcasting for introducing a new thing to the whole country. It can, we think, safely be said that only a handful of people in the Dominion, apart from broadcasting, had had the opportunity of hearing to advantage the melody and harmony possible from balanced Maori voices. Only the few who have travelled in the hot lakes district may have ever attended a Maori concert, and then under conditions and auspices which are perhaps least advantageous to the splendid qualities of the Maori race. Literally thousands of white people in the South Island have never seen a Maori, and know nothing of his history, tradition and musical capacity. Then in one magic evening they are introduced to a new world of melody. In the company's happy thought of celebrating the anniversary of the Treaty of Waitangi in this way, a distinct musical service has been rendered the country, and it is to be hoped, as many listeners have already expressed, that the vein of talent so opened up will be fully developed for broadcasting purposes. If the increased interest thus certain to be developed in Maori song and story leads to greater appreciation of their art and the preservation of their songs for future generations, it will be all to the good.

Another pleasing feature about the broadcast has been the volume and spontaneity with which the appreciation of listeners has been expressed. The event was well announced beforehand, so that a huge audience stood ready—unquestionably the biggest audience ever concentrated on one single evening in this Dominion for any one event. That so many of this audience were moved to write their personal thanks augurs well for the relationship being built up with listeners. We are a small country, and opportunities for special features are limited but given the opportunity this pageant shows there is present the enterprise to develop it to the full for the pleasure and service of listeners.

FRANCE DRY TRICKLE CHARGERS

FRANCE DRY AUTOMATIC TRICKLER (With Relay Switch).

THE FRANCE DRY AUTOMATIC TRICKLER is equipped with relay switch and receptacle for "B" Eliminator Plug. Automatically, when switch on set is thrown "ON," "B" Eliminator is thrown "IN," and Trickler cut "OUT," and vice versa.

PRICE £5/17/6

FRANCE DRY TRICKLE CHARGER (Without Relay Switch).

THE FRANCE DRY TRICKLE CHARGER is not equipped with relay switch, being designed for continuous charging. It is noiseless in operation, and can be left "on charge" during reception.

PRICE £4/10/-

FRANCE TRICKLERS are of the dry disc type, employ neither bulbs, liquids, nor moving parts.

FRANCE TRICKLERS have THREE CHARGING SPEEDS—1, 2, and 1½ Amperes.

Your Local Radio Dealer can procure FRANCE TRICKLE CHARGERS for you from the N.Z. Master Agents:

RADIO LIMITED

COMMERCE BUILDINGS (TOP FLOOR), 1 ANZAC AVENUE,
AUCKLAND.

Sporting

TOUR OF THE AUSTRALIANS

BROADCAST OF RESULTS

The next event of international sport to interest New Zealanders will be the visit of the Australian cricket team, which commenced a tour of New Zealand on the 15th and 16th of this month with a game against Nelson.

The strength of the visitors is apparent when one realises that the team includes such well known internationals as V. Richardson (S.A.), who is captain; Grimmett (S.A.), the celebrated googly bowler and a New Zealander by birth; Oldfield, of N.S.W., behind the sticks; Ponsford (V.), the greatest run-getting freak of all time; Woodfull, captain of Victoria in Sheffield and an Australian opening batsman; Kippax, captain of N.S.W. and a serious rival to Ponsford as a run-getter.

The remaining members of the team are: D. Blackie and Morton, of Victoria, both of whom are Shield bowlers; Schneider and Alexander, of South Australia, two of the most promising batsmen in Australia, Schneider having made 108 as opening batsman against New South Wales.

Jackson and McNamee (N.S.W.) and Oxenham, of Queensland, complete a wonderfully strong side, who should be capable of producing many runs and giving our batsmen plenty to do, besides giving a display of fielding that should be brilliant.

By the way, McNamee is regarded in some quarters as being the man Australia is looking for to take up the mantle of fast bowler in the approaching test.

The fact that England visits Australia this year for a further series of tests, and that Australia will be keen to retrieve the ashes lost on the last tour of England, enhances the interest in this team's tour of New Zealand.

It is a compliment to the improved standard of New Zealand cricket that such a strong combination should have been selected, and it is significant that the whole of the original selection have accepted the invitation to tour.

Arrangements are being made to broadcast extracts of the games played in the four centres, and results of the games in the minor associations will also be broadcast from all stations in the evenings. All who are interested in cricket and many besides must be anxious to see the New Zealand players who did so well during the recent tour of England, and will no doubt make every effort to be present at these games, but those unable to attend through disability or distance will be able to sustain their interest through the efforts of the Broadcasting Company to bring the game to them.

The matches still to be played are: V. Wellington, at Wellington, February 17, 18, and 20; v. Otago, at Dunedin, February 23, 25, and 27; v. Canterbury, at Christchurch, March 2, 3, and 5; v. Auckland, at Auckland, March 9, 10, and 12; first test at Auckland, March 24, 26, and 27; second test at Dunedin, March 31, April 2 and 3.

AUSTRALIA'S CRICKET STRENGTH

REVIEW BY MR. A. VARNEY.

At 2YA on Thursday evening next Mr. A. Varney will review the outstanding personalities in Australian cricket, and discuss their individual merits as probables and prospects for selection to represent the Commonwealth against the English team visiting Australia this year.

HAIG MEMORIAL SERVICE

BROADCAST BY 2YA

On Sunday, February 12, a united memorial service was held in the Wellington Town Hall in connection with the death of Sir Douglas Haig. The gathering was organised by the Mayor and the Returned Soldiers' Association, and was very largely attended by ex-service men and the general public.

The whole service was broadcast by 2YA for the benefit of those unable to be present.

THE TASMAN FLIGHT

Captain Ivan L. Kight, who but for his sportsmanship in allowing the decision to rest with the issue of a toss would have occupied Captain Hood's place on the night of the ill-fated flight, will on Monday, the 21st instant, broadcast from 2YA his version of the Tasman flight. His story, which cannot fail to be deeply interesting, will have reference to those who mourn the tragic passing of their dear ones.

Edison Evening on Feb. 18th

TRIBUTE TO WONDER MIND OF THE AGE

As announced last week the special Edison evening will be given from 2YA on Saturday, February 18. It is confidently anticipated that the missing gramophone record bearing Edison's personal message will be duly to hand by the mail steamer arriving early this week, and in that event the programme, which will be of a highly interesting character, will take place as announced.

Our illustration shows Mr. Edison at the radio microphone, broadcasting the same first words that were spoken to the original phonograph—"Mary Had a Little Lamb, etc." For long enough Edison refused to appear before the microphone, but on August 12, 1927, on the occasion of the jubilee of the discovery of the "Edison effect," he was induced to appear. It was Edison's discovery of the fact that a heated filament in a vacuum gives off electrons which paved the way for modern broadcasting. He, himself, did not proceed with the development of his discovery, leaving that to Fleming, but Edison did lay, in this sense, the foundation stone of modern broadcasting.



BROADCAST RELAYS

QUESTION OF PAYMENT

COMPANY'S STATEMENT

An official statement has been issued by the Radio Broadcasting Company concerning the subject of payment for relays, on which some public comment has been made of late.

The band contest which is to be held in Christchurch this month is not to be broadcast. This information has been conveyed to the company, whose application to broadcast has been refused. Referring to the matter, Mr. A. R. Harris, general manager of the company, said that the secretary of the Band Contest Committee had stated that the reason for the committee's decision was that it refused to give the company "something for nothing." "There is apparently a misconception amongst some people regarding the functions and duties of the Broadcasting Company," said Mr. Harris. "In the first place, it is not the Broadcasting Company that is getting something for nothing, but the attraction that is broadcast on relay. It costs the Broadcasting Company considerable

money to broadcast, and the persons whose performance is broadcast no additional expenditure. Neither has it any adverse effect on the attendance. As a matter of fact, it has been proved here and elsewhere that considerable benefit accrues to the attraction broadcast, due to the publicity given.

"The Radio Broadcasting Company's position is not that of a private company formed to exploit the public, but that of a public company formed under Government regulation to administer a public utility in the interest of the community.

"The company appreciates that it costs racing and trotting clubs, band associations, musical societies, and such like public institutions a considerable amount of money to provide their form of entertainment, and it is their business to decide whether they shall or shall not permit broadcasting. The company also appreciates that these institutions are giving, in their own way, and at considerable personal effort and expense, service of the greatest public interest. However, as the Broadcasting Company's service is also given in the public interest, it cannot for this reason make direct payment for relays, although it is prepared to co-operate with such institutions to the extent of providing the broadcasting service without any cost to them."

If 4QG were cured of its horrible blur we New Zealanders would relish the excellent programmes from that station.

At Last!

Operate your Radio Receiver direct from the house lighting supply and eliminate "A" and "B" Batteries permanently, with

Kodel Transifiers

No Batteries, Acids, Liquids, or Charging, uses current only while set is in operation.

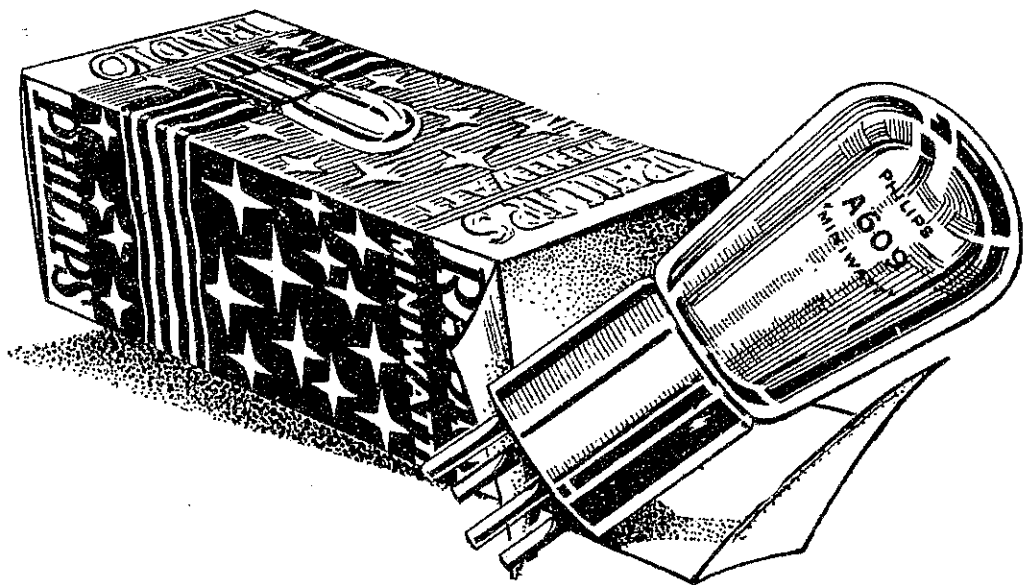
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IT COULD NOT BE A BETTER VALVE
IF IT BEARS THE INSCRIPTION
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IF the mirrored surface of any Radio Valve bears the words "Philips "Miniwatt," you may be sure that it would be impossible to use a more economical valve.

Maybe, your present tubes are getting old and obsolete—replace them with Philips "Miniwatts," selecting the correct types for each socket. Then, hear your old set bring in stations that you never heard before—reproducing music with a clarity you thought impossible.

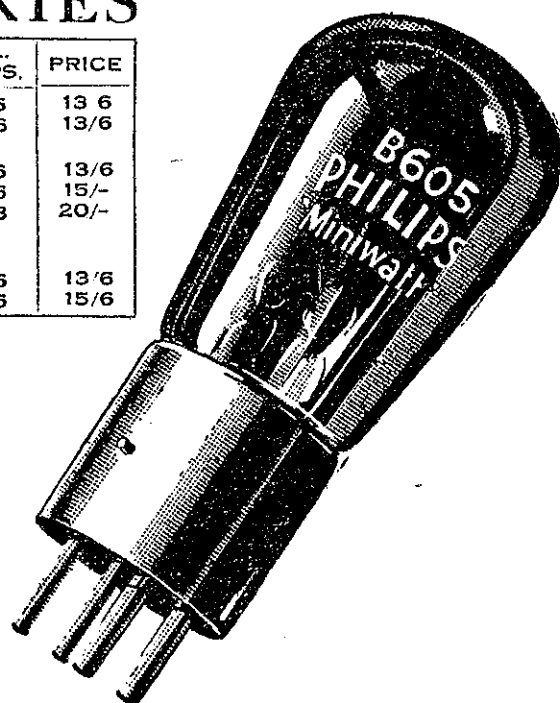
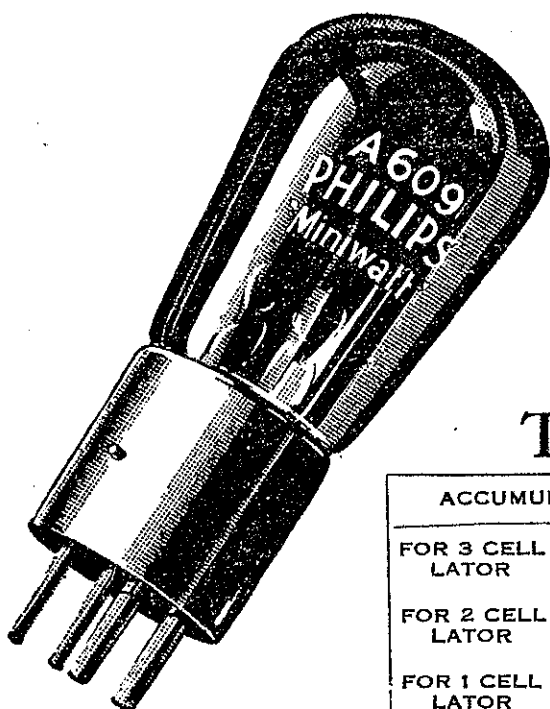
Efficiency—Economy—Long Life—Dependability—you will get them all when you say "PHILIPS."

THE POINT-O-SIX SERIES

ACCUMULATOR	"MINIWATT"	PURPOSE	FIL. VOLTS	FIL. AMPS.	PRICE
FOR 3 CELL ACCUMULATOR	A609	GENERAL PURPOSE	6	.06	13/6
	A630	RESISTANCE CAP.	6	.06	13/6
FOR 2 CELL ACCUMULATOR	A409	GENERAL PURPOSE	4	.06	13/6
	A425	RESISTANCE CAP.	4	.06	15/-
	A415	DETECTOR AND 1ST STAGE AMPLIFIER	4	.08	20/-
	(THE "FOUR FIFTEEN")				
FOR 1 CELL ACCUMULATOR	A209	GENERAL PURPOSE	2	.06	13/6
	A225	RESISTANCE CAP.	2	.06	15/6

THE .1-15 SERIES

ACCUMULATOR	"MINIWATT"	PURPOSE	FIL. VOLTS	FIL. AMP.	PRICE
FOR 3 CELL ACCUMULATOR	B605	POWER	6	.1	13/6
FOR 2 CELL ACCUMULATOR	B406	AUDIO POWER	4	.1	13/6
	B403		4	.15	15/-
FOR 1 CELL ACCUMULATOR	B205	AUDIO POWER	2	.15	13/6
	B203		2	.15	15/-



PHILIPS
RADIO

MAKERS OF THE LAMPS THAT LIGHT YOUR HOME

From the Woman's Point of View.

By VERITY.

TO-DAY AND TO-MORROW

They say:

That the frocking of Mrs. J. Gordon Coutes at the successful and largely attended garden party given by Mrs. Macarthy Reid at the Hutt on Saturday, carried with it a note of the inimitable charm and freshness of youth. Ivory triple-ninon, palely patterned, enhanced by a coat of heavy ivory marocain trimmed with shorn lamb; a white hat under the brim of which was set a soft feathery chou all went to make an exceptionally delightful ensemble—one that is not readily forgotten.

A Water-Colour Show.

At the rooms of the British Medical Association, at 26 The Terrace, Wellington, at present is on view an entirely charming collection of water-colours, the work of H. H. Tombs. Anyone to whom delicacy of colouring and charm of composition make appeal will do well to look in for half an hour during this week. The small exhibition covers a wide range, from the cottages of England and a delightful London interior to gay bits of colour on the Mediterranean Sea and the Indian Ocean. Several views of Switzerland are to be seen, perhaps the pick of these being a Tarn at Grindelwald. Also is New Zealand and Australian scenery represented, differentiation of atmospheric effect being treated with sincerity and skill. To many doubtless the most fascinating picture of all will prove an Arab boat at Suez, which gaily scuds through aquamarine waves right into the heart of the beholder. Many of these attractive bits of colour are to be purchased for three, or even two, guineas; one dreamlike effect of a mass of cloud floating on blue ocean to be had for the latter sum.

N.Z. in Australia.

Those interested in the far-too-sunny south may like to hear of friends of yesteryear who met recently in Melbourne at a pleasant tea party. Mrs. McKendrick was there (once Janet Landels), Mrs. Gamble (nee Tapper), Mrs. Donald Matheson (Ethel Hazlett), Mrs. Instone (Cora Fisher), Mrs. Callander (nee Fraser), Mrs. Gerald Doorly, her sister, Miss Whitson, and Miss Scherek.

Concerning Paula Scherek, so greatly appreciated by musicians and laity for her vivacious personality and great artistic gifts, many Christchurch people will regret to hear of an accident that befell her. Fumigating a box of clothes, on opening the lid Miss Scherek received the full blast in her face and was very near suffocation. Eyes and ears were badly affected, and for some time she could not speak. Nothing daunted, she soon fared forth, carrying a card, "An accident. I cannot speak," and also a pencil and block for communicating with her friends, thus bravely keeping the flag flying. As always, she is a vivid figure in large brown leather coat fitting nowhere in particular, the shortest of skirts, black skull cap, and high Russian boots.

An Authoress's Party.

A novel way of entertaining guests was introduced by Mrs. Stuart Menzies, the authoress, at her party at the Hyde Park Hotel recently.

The hostess, who had arranged for a number of well-known Parliamentary characters to be impersonated, wrote for each impersonation a little verse emphasising some characteristic of the person represented.

Thus, when the entertainer impersonated Lord Balfour he recited the following lines, hitting off the Conservative leader's indecision during the tariff reform controversy:—

I am not for free trade,
And I'm not for protection;
I approve of them both,
And to both have objection.

This was Mrs. Menzies' tilt at Mr. Churchill:—
Some say that my coat is reversible,
And whenever a change is rehears-
ible

My country I'll serve
With magnificent verve,
My objections are always submers-
ible.

Mr. Baldwin's pipe, of course, was pilloried:—
To cartoonists and other such folk
My pipe is an excellent joke.

To be perfectly fair
I haven't much flair,
But there's certainly plenty of smoke.

A Little Knowledge.

"Can you show me one of those pianos you just wave your hands over? I want to buy one as a present for my daughter."

This was an actual inquiry in a London piano shop recently.

The gentleman had evidently been reading of the young Russian, Professor Theremin, who extracts music from the waves of ether by "waving his hands in the air" over his magical box. He wanted a piano of that type!

Radio and Country Life.

A further good work is being accomplished by radio, which elaborate and expensive schemes have failed to do—to attract settlers from the cities to the outback, and to keep them there. The awful loneliness of days and nights, and the entire absence of social life and amusements, have driven many good men back to the city. Wireless, bringing to them the voice of the outside world, has changed the lives of thousands of outback settlers. Loneliness is forgotten when men, white men, and women, too, unseen but heard, banish space and boredom with song, music, and story. Through the familiarity of their voices on the air those people become firmly established outback as friends. Thus wireless is doing a work of national importance. It is quieting the urge in young men in the country to get to the city and to see life. It is keeping station folk abreast of the times. Newspapers and letters arriving weeks late are no longer devoured eagerly as "news." Radio has told of all the events of the day so quickly and completely that men thousands of miles from cities often know the march of events more speedily than their city brothers, who might wait for the newspapers to tell the stories the following day.

—Uncle Sandy, 2YA.

WHY?

If every part of atmosphere
Is filled with flying thought,
In oral speech or music's strain,
And to the ear is brought?
If wireless messages can pass,
And make the air their slave,
From continent to continent,
Across the ocean wave?
And in the twinkling of an eye
Be audible to men,
Ten thousand leagues across the sea,
And far beyond our ken?
If song with all its liquid notes,
As true as voice of bird,
Can winged fly beneath the stars,
And instantly be heard?
If nothing in the heavens above,
Or on the earth below,
Can intercept a melody
Upon its onward flow;
In lands on either side of earth,
Or in the realms on high,
And all the ether pass it on
Beneath the vaulted sky?
If desert plain, or sand-blown dune,
(Immensity of space)
Can offer no obstruction, or
These flying thoughts efface?
If highest mountains cannot stop,
These messages of air,
Why should we ever doubtful be,
That God can hear our prayer?

—Uncle Sandy, 2YA.

TO-DAY AND TO-MORROW

An Art of Broadcasting?

Is there an art of broadcasting—or can it do no more than borrow its form, like its material, from arts already in existence, music, drama, and the rest? This question has during the past five years been much under discussion. The sceptics, who still regard broadcasting as either a toy or a scientific freak, will tell you that it is no true art—only an inferior interpretation of the other arts. Do not listen to them. They are of the tribe of highbrow who believe that nothing which has a wide and popular appeal can ever be, in any sense, artistic. The fact is that broadcasting, having achieved comparative technical perfection, is gradually feeling its way towards an art form of its own. The development of this will be no overnight growth. Art does not come to birth that way. During the course of the next few years broadcasting will be giving to us something which no other art—the drama, painting, the cinema—can give. The first fruit of this patient development is the new form of drama which young writers like Cecil Lewis, with a faith in the potentialities of the broadcast play, are giving us. (From the "Radio Times.")

Our Candid Friend.

This is a true copy of a letter received from a New Zealand listener:—Your programme reminds me of a 3rd rate Boarding House, dishing up morning after morning, day in, day out, Lamb, Ham, Sausages, or Mutton. For a change they would hash them up and call it Dry Hash. The only difference being you mix them together in couples and eat, only to make the flavour worse, then there is the tryo—yes, they are trying, that's all one can say, I am sick of hearing them, one gets tired of rice for breakfast, dinner and tea all the year round. I am so sorry Miss T.—was indisposed, however I had also suffered enough with her only effort, I developed a fearful spasm, however I got rid of it with a good strong Brandy only to get it again when her partner sang solo. Thank my lucky stars they did not sing together. I really believe I would have had to laid up for a time. What a wonderful recitation of — to say it was rotten is to flatter it. Your soprano singers, not one out of 20 are worth a tin of fish. I would dispose of them like I would a scraped Ham Bone, Miss — well she can sing, but we do not get much of her, not that I care much for sopranos however I like to give credit when due. Miss — may be alright, but — in my opinion is superior over the wire, then there is — and lots of others, whose songs are of Moses' time, all of Love, Love, and Love makes me sick, give us something with some life in it, here a few songs they might sing. In the Sweet Bye & Bye, Down amongst the Dead men, The Dying Duck, Its a Sad Sad World, Mother's Dead Baby, and such like they are so elevating and would brighten the workers of the City Council and say Workshop workers in their evening's, do not on any account fail to have these sung in Italian as they all understand the Dago language. However Mr. Announcer you (poor fellow) have to listen to it all. Oh! Oh! how I do envy you, thank goodness I can put down the Phones, if your programme does not improve I may be hard on it next time I attempt to criticise. Yours & cetera, Crystal User. P.S. My misfortune that I cannot buy a better set so that I could tune it on to a live wire.

For Dog Lovers.

Alexandre Dumas, the famous author, claimed some extraordinary qualities for his dog Pritchard. He said, "Pritchard is the only dog in whom I have found originality and unexpectedness, the qualities that one finds in a man of genius." Allowing for the natural exaggeration of a lover of dogs, it is true that any dog possesses the qualities that one finds in a man of genius. Which submits the question, Can dogs think and reason? My own opinion is that they can, since some of the things they do undoubtedly pass beyond mere instinctive reaction.

Probably most of us will refuse to go all the way with Alexandre Dumas, remembering his Gallic exuberance of phrase, but most of us agree with another thing the same famous author said about dogs.

"I think God is equally concerned with man, and with all the other animals to which he has given life," he wrote. "But perhaps God has a special leaning towards dogs, for of all the animals it is the one to whom he has given an instinct that comes nearest to the intelligence of man."—Pastor W. D. More, 4YA.

An Explanation.

A speaker at a recent meeting of the U.S.A. Institute of Radio Engineers partly explained a mystery that has troubled many men since Adam.

He was discussing loudspeakers. He told how the distribution of harmonics differentiates the various musical instruments, and how the richness of a tone, at its original source or in its reproduction, increased in proportion to the number of harmonics. Then he made this statement:

The fundamental frequency of a man's voice is of the order of 125 cycles per second, and of a woman's voice 250 cycles. In order to reproduce a man's voice in its full richness, the reproducing device must handle frequencies only as high as 5000. A woman's voice has more harmonics, so that it would be necessary, in order to reproduce her voice with equal richness, to handle frequencies up to 7000. That is one reason why it is so hard to understand a woman!

A Radio "Shadow."

An American destroyer division reports that there is a radio "shadow" along the north side of Haiti, which makes it impossible for ships cruising along the north side of the island to communicate with vessels on the south side during the times when the high mountains of Central Haiti intervene.

Bang Went Someone's Overcoat.

The returned Aberdonian was recounting the glories of London.

"I went into one of their tea shops," he said, "and for sixpence I got a cup of tea, a scone, and butter, and a new over-r-r-coat."

True Wisdom.

A bachelor is a man who looks before he leaps, and having looked, does not leap at all.

Byer since I've was produced by depriving Adam of a rib woman has hindered man from putting on side.—Mr. Douglas Woodruff.

The Letters of Annabel Lee

In heaven the only art of living,
Is forgetting and forgiving,
Mutual forgiveness of each vice,
Such are the gates of Paradise.

My Dear Elisabeth:

Thus sang Blake, simply and sweetly, in time long past, and we are as far off as ever from his gentle creed. But if we all grew too good, 'twould be but a dull world. Balzac's opinion was that dissimulation adds to the charm of women, and doubtless many are of opinion that recrimination adds to the charm of the world. Talking of brawls, lately I saw a film version of Joseph Conrad's "Romance." Full to the brim is it of primitive passion and piracy, deep blue sea rolling round an isle of mystery; whither quests Ivor Novello, in the guise of a Spanish captain who is at once mountebank, soldier and hero. Youth and beauty in distress he rescues from the Bold, Bad Man, skilfully depicted by Roy d'Arcy. Joseph Conrad's beautiful story has been converted into thrilling melodrama that produced a series of shocks not at all resembling my suspense and delight when first I read that epic narrative of the vision splendid depicted by the magical pen of the master. Of all the handsome protagonists of the screen, Ivor Novello carries the palm. Youthful and of a grace remarkable, with great gifts as an actor, and nothing of the experience-scarred touch that spoils John Barrymore for the role of ardent Romeo, he has a nobility in the shaping of head and face for which one usually seeks in vain among the heroes of Hollywood.

This week that nice boy Richard Barthelmess is appearing in "The Patent Leather Kid," in which gripping screen play his admirable abilities find scope. Never again, perhaps, will he have so wonderful a chance as in "Broken Blossoms," that realistic and heart-rending tale of Chinatown; but in this latest role he does very fine work, portraying how, in the terrible school-room of the Great War, slackness, brag and paltriness are purged away, giving place to qualities that go to make one of those men whom we remember, or should remember, with high gratitude through all the years that are left to us.

Verily this year of our Lord is the Day of Youth, which shines with a great effulgence at home and abroad.

Frivolity on the 'Phone.

A man rang up the box office of the Little Theatre, London (the home of repertory) the other day. "What play are you putting on next Saturday night?" he asked.

"You Never Can Tell," was the reply.

"No, I suppose you can't with a repertory company," agreed the inquirer.

The Subtle Difference.

"What is the difference between 'Scots' and 'Scotch'?" asks an inquirer.

"Twelve and six," says one who knows.

Cecil Beaton's one-man show in London was an example of this, whither thronged modern man and maid in great number to admire its own contours, or those of its friends, depicted by this youthful and brilliant painter, photographer and sculptor. With the independence of his age and time Mr. Beaton refuses to be bothered with people unless he happens to like them. How enviable, to be sure! Oh, would some power the gift give us to take the same stand!

Also with the perennial and fleeting charm of youth is Rex Whistler, lately making a great success in decoration of the new Refreshment Room in the Tate Gallery. Of an interest unique, brilliantly clever indeed is the painting he has achieved. Ruins are depicted in his decorative scheme, and prancing steeds; moonlit abbeys, antelopes, gazelles, and all the fun of the fair; while through the beauty and wonderment walk, and ride, and linger slender ladies with their cavaliers, wearing quaint garb of another decade. On every wall of this fascinating room is a painted sequence of whimsical and decorative fantasy; all this extraordinary vision and executive ability having been acquired in twenty-two short years, perhaps inherited from the misty past, or it may be just a plain gift from whatever gods there be.

The Summer Sales are in full blast, and shop windows are bedecked and bedizened with truly terrible left-overs, cast-outs, the rejected of all. Extremely pitiable they appear, and dear at the price, however cheap. Here and there, if one has a sharp eye and a pound in the purse, a good garment may be snapped up. One such confronted me recently; a dainty-damsel-ish confection in silk of the shade beloved of middle-aged mediocrities who buy it because it matches their eyes. Fashioned with the skimpy "body" of the moment, billowy skirt vandyked at hem, over the shining surface of this Frock for a Debutante, as the placard has it, are little scattered nosegays of the forget-me-not species of horticulture, the whole creating an effect of a pink and blue shepherdess of Arcady.

To many women the cult of blue has great appeal, and they will rejoice to know that turquoise is again high in favour. Chunks of it are

TO ELECTRA

I dare not ask a kiss,
I dare not beg a smile,
Lest, having that or this,
I might grow proud the while.
No, no, the utmost share
Of my desire shall be
Only to kiss the air
That lately kissed thee.

—R. Herrick.

Just as Well!

Tony Weller was right when he said "Beware of widows," for widows know all about men, while the only men who know all about them are dead.

Radio Enters the Show Business.

Broadcasting, which started as a part of the electrical business, has developed into an important member of the show business. Pay-rolls of from 500 dollars to 2000 dollars a night are paid out for talent alone on the big American chains; outstanding entertainers are reported as getting as much as 2000 dollars for a single short appearance before the mike. And radio is making its own artists, too. So great has been the demand of the public to see radio artists face to face that a broadcasting chain has established a bureau to provide personal appearances for its own artists.

Some Features of Next Week's Programmes

NOTES FROM 1YA

The Prison Scene from "Maritana" is the piece chosen by Madame Irene Ainsley for presentation on Monday evening. These operatic nights at 1YA are very popular. Wallace's "Maritana" is one of the most melodious of operas, and the Prison Scene is one of the most noted in the well-known work. Madame Irene Ainsley will fill the role of Lazerillo. Mr. John Prisk will be Don Caesar, and Mr. Trevor Lewis will be Don Jose.

In this scene there are sung such favourites as "Alas, Those Chimes," "Whither That I," "Let Me Like a Soldier Fall," "In Happy Moments," and "Turn On, Old Time."

Apart from these items, two songs from "Maritana" will be sung during the evening. "Scenes That Are Brightest" will be rendered by Miss Nancy Hanna, and the same artist will, in association with Madame Ainsley, sing the duet "Sainted Mother."

The same evening "Star of Eve," from Tannhauser, will be sung by Mr. Lewis.

Other fine musical items will be contributed during the evening. When Madame Irene Ainsley is singing "Serenata" Miss Ina Bosworth will play a violin obbligato.

Instrumental music will be supplied by the Bosworth-Hemus-Towsey Trio and by the orchestra at the Majestic Theatre.

A talk to farmers, with examples of actual results of top-dressing, will be given by Mr. H. H. Edwards on Tuesday.

The concert on Wednesday will be provided by the Auckland Artillery Band and the Hazell-Sutherland Duo. The band items will be of the usual high standard of this combination, while the vocalists will provide some gems from several of the masters.

Mina Caldwell will be singing three well-known songs on Thursday evening. They will be "In the Highlands," "Yearning," and "The Little Silver Ring." Miss Lola Solomon will also be singing the evergreen favourite, "Kathleen Mavourneen."

Both Mr. Barry Coney and Mr. Birrell O'Malley will be heard in well-known songs on Thursday evening.

The popular Asquiths will be giving one of their cheerful thirty minutes' entertainments on Thursday evening.

An amusing interlude in Thursday's concert at 1YA will be given by Mr. R. Sellar, an Auckland legal gentleman, who will speak on "Humour in Court."

The Bohemian Duo will henceforth be known as the Bohemian Trio. The duo were prime favourites at 1YA as purveyors of the lighter class of music. Now that they have added to their membership the resulting trio should prove even more entertaining than the one-time duo. The trio consists of vocalists and instrumentalists who specialise in playing and singing popular songs. Their instruments consist of Spanish guitars, steel guitars, mandolins and ukeleles. These artists have toured the principal theatres (including the Tivoli circuit) throughout Australia and New Zealand. Two of them are well known to listeners-in as the Bohemian Duo, and the lady member as Nell the Bohemian. Variety is the keynote of their performances. Their harmony is perfect, and they blend their work in such a way that listeners-in will be more than satisfied. The Bohemian Trio will appear at 1YA on Friday.

2YA's Maori Night

A TRIBUTE TO THE PARTY

THE Maori Party! Of their work nothing more requires to be said. Its excellence is on record in the memories, long to be cherished, of the thousands of listeners whose privilege it was to enjoy perhaps the most notable—certainly the most unique—programme that has been broadcast from this side of the world. "Maori concert delightful beyond expression!" So read one of the innumerable congratulatory telegrams which poured into 2YA from all parts of the Dominion. Yes, of their work no more need or could be said.

But what of the party themselves? They were Maoris, you know. Their forefathers, by no means remote, were in the common acceptance of civilisation—savages! Less than one hundred years ago, as Mr. Hamiora Hakopa reminded his listeners, his forebears were—well, shall we say, uncivilised. A great people, yes! Stalwart, courageous, chivalrous, yes! But still a native people living in primitive simplicity in a land primeval. Yet the party who came to 2YA in this year of grace, a

party whose members were in every respect typical of the Maoris of today, were, from the oldest to the youngest, a party of ladies and gentlemen—cultured, refined, delightful, lovable. As one visitor to the studio remarked, "to see them was to yearn to know them, to know them was to love them." And that, really, was the impression they created. They were so obviously happy, so sincerely friendly, so keenly enthusiastic about the task in hand. Better leader than Mr. Mele Kingi, the party could not have had. He was the rangitira to whom all looked for guidance—a counsellor and friend at all times dignified and dependable. Associated with him as joint-organiser was Mr. Reg. Ritchie, than whom the Maori people have no warmer admirer, and no truer friend. Mr. Kilton, too, must not be forgotten. He it was who helped them in the preparation of the musical portion of the programme, and officiated capably as their conductor. To his training and direction of their talent the Maori party owe much of their great success.

Engaged for Friday at 1YA is the McGruer-Smith Duo. The soprano of the duo, Miss Alma McGruer, is a well-known and popular performer who has made herself a warm favourite with listeners. She has often acted as soloist at municipal band and organ performances, and Bohemian and Choral Society concerts. Miss Beryl Smith's splendid contralto voice is often heard from 1YA. She is well known on the concert platform, and is always in demand as a soloist.

Mr. Clyde Howley, well known as the leader of the "Internationals" of the Dixieland Cabaret, will be heard in a new role at 1YA on Friday. Mr. Howley is a "whispering baritone" and jazz pianist of outstanding ability, and his initial performance before the "mike" is eagerly looked forward to by listeners.

Three fine elocutionary pieces will be given by Mr. J. F. Montague on Friday. These are "Thanatopsis—A View of Death," "The House by the Side of the Road," and a group of short poems.

The Lyric Four—Messrs. A. Ripley, A. McIlwain, H. Richards, and E. Thomas—will contribute the vocal portion of Saturday's entertainment. The quartets will comprise "The Pilgrim's Chorus" from "Tannhauser" and "Night Winds Gently Flow." The humorous items to be given by Mr. A. McIlwain will be "Setting a Hen" and "The Vicar's Presentation."

The popular St. Andrew's Quartet, aided by the Bosworth-Hemus-Towsey Trio, will give a special studio concert on Sunday evening after the broadcast of the service in the Baptist Tabernacle.

2YA NOTES

The Ariel Singers are to give a further recital at 2YA on the 20th instant, when a pleasing miscellaneous programme will be "put on the air." Colebridge Taylor's "Isle of Beauty," for S.A.T.B., is a beautiful composition, whilst further works by modern British composers are the soli "Windy Nights" (Stanford) and "Hey, Ho! The Wind and the Rain" (Quilter). An innovation is the inclusion in the programme of two popular Sea Shanties, "What

shall we do with the Drunken Sailor?" and "Rio Grande," both suiting Mr. J. M. Caldwell's bass voice admirably. The Ariel Singers' closing number on the 20th will be Mendelssohn's well-known "Victor's Song." Another of their programmes will be heard from 2YA on the 24th instant.

It has been impossible to accede to all the requests sent in to the Orpheus Quartet for their request programme on February 21, but Mr. Len Barnes has selected the most popular numbers. The quartets are "Just a Song at Twilight," "Tell Me, Pretty Maiden," from "Florodora," and "The Carnival," by Rossini. Mrs. Harris and Mr. Barnes will sing "Glow, Glow," from "La Mascotte," and Miss Lily Mackie and Mr. Arthur Coe will render "O that we two were a-maying," by Nevin. The solo numbers are "Just a wearyin' for you," by Miss Mackie, "Where'er you walk," by Mr. Coe, "Rose in the bud," by Mrs. Harris, and "West Country Lad," by Mr. Barnes. The quartet wish to thank their admirers for their requests, and are only sorry that all the numbers sent in could not be given.

There is no monotony about the programme scheduled for February 23, to be sung (or otherwise) by the Mellow Fellows. They are giving ballads such as Tirindelli's "Springtime," sung by the Tenor Fellows, and the favourite "Wee House Among the Heather," by the Baritone Fellows. Intermingled with these are concerted numbers by all the members of the party. "A Plantation Lullaby" is bound to be popular as one of the best of negro harmonised arrangements, all of which are peculiarly suited to male voice combinations. Other part songs will be "When You Hear de Banjo" and a musical switch. Practically a new item is a bracket of James's Australian bush songs, consisting of "The Stock Rider's Song" and "A Bush Night Song." These are fine compositions, and typical of the scenes they portray. The Bass Fellow is to interpret them. In short, the aim of the Mellow Fellows is to provide as much variety as possible, hence the Yorkshire "Lament," entitled "Eh! I'm Upset!"

Associated with the Mellow Fellows on the 23rd will be the Artillery Band, under Captain Herd, while Mr. Billy Hart will also contribute to the evening's enjoyment.

Listeners-in to 2YA will be pleased to learn that the very pleasing combination of voices—the Celeste Quartet—will again be on the air on Friday evening, the 24th instant. Each artist in this quartet is in the first rank of vocalists in the capital city, and listeners are assured that the items to be rendered will conform to the high standard and variety attained in past performances.

The quartets to be presented comprise a bright and spirited number by Wheeler, "A Fox Hunt," and a humorous part song, "Good Advice," by D. Colville. The latter number is a recent publication, and abounds in sparkling humour and melody, and will undoubtedly find favour with all.

Of the solos and duets, special mention may be made of that well-known duet "Still as the Night," by Gotze, which will be sung by Miss Myra Sawyer and Mr. W. Boardman, who can be relied on to make the most of this glorious number. Miss Sawyer will render that delightful song "The Nightingale and the Rose," by Thompson, and Mr. Boardman's resonant bass will be heard to advantage in a rollicking ballad "The Vagabond," by J. L. Molloy. Miss Mabel, contralto, of the Celeste Quartet, will be heard in a dainty number, "A Request," by A. W. Finden, and in association with Mr. Edgar Swain will present the duet "Venetian Song," by Tosti. A bracket of two short ballads will be rendered by Mr. Swain, whose tenor voice will be heard to distinct advantage.

The "Melody Four" male quartet will be heard in a popular programme of quartets, duets, and soli, at 2YA on February 26. The quartet arrangements of popular songs having proved so popular, two of this type of quartet will be sung on this occasion—"Dripping and Dreaming," arranged for tenor voice with quartet accompaniment, is a very pleasing number, which should meet with the approbation of all listeners-in. Mr. Frank Bryant will be heard in two songs, and Mr. S. Duncan's contribution on this occasion will be "Out in the Sully Night." Mr. R. S. Allwright will sing "Tours," "Mother of Mine," and Messrs. Bryant and Marshall will unite in singing the ever-popular duet "Excelsior."

In presenting a miscellaneous programme on Sunday, February 26, the Ariel Singers should again be worth hearing. The concerted numbers should be especially pleasing, balance and vocal quality being very necessary for such flowing harmonies as are contained in "The Ash Grove" and "Sleep, Gentle Lady" (the latter by Sir Henry Bishop). The duet "Love Divine" is deservedly well known, as is Nelson's bass solo "The Windmill." Modern English works by Elgar and Bantock are also to be presented.

3YA NOTES

With Derry's Band, the Beckenham Male Quartet, Mrs. Stallard and Mr. James Laurensen before the microphone, listeners-in to 3YA can expect one of the most enjoyable concerts of the week on Monday. A varied programme has been arranged.

The travelogue to be given by the Dulcet Quartet on Wednesday evening will provide a splendid Scottish concert. The leader of the quartet (Mr. A. G. Thompson, B.A.) has prepared an entertaining description of an itinerary through the country which lies north of the Tweed, and many of the songs which are associated with the Border, the Lowlands and the Highlands will be sung. The previous travelogue given by the Dulcet Quartet, that of London, was a great success and Scotland will, without doubt, be equally so. Such a travelogue would, of course, not be complete without bagpipe music, and this need for a Scottish entertainment will be supplied by Mr. Angus Mackintosh. On this occasion, too, the Christchurch Broadcasting Trio will play Scottish airs, and Mr. Campbell Brown will contribute national recitations.

Excerpts from Grand Opera will constitute the programme for Thursday evening, which is to be provided by the Madame Gower-Burns Grand Opera Quartet. This talented combination has chosen some of the best songs from the most famous works. These will comprise solos, duets, and a quartette. Lovers of Grand Opera music will have a treat this evening. Miss Maiona Juriss, A.T.C.L., will also be reciting.

The Melodious Quartet, whose Friday evening concerts are always such a pleasure, has a programme of the usual high standard for next week. Miss Frances Hamerton, L.A.B., will sing several of her dainty little songs which so charm listeners. Miss Belle Renaut will sing "Slumber Song of the Madonna" and "Damon," while Messrs. Russell Sumner and T. D. Williams will be heard in solos and in a duet, "The Battle Eve." Two quartettes will also be sung. The Christchurch Broadcasting Trio, Miss Irene Morris (violin), and Mr. Lyndon Christie (saxophone) will contribute the instrumental music.

On Friday evening Miss Naare Hooker, L.T.C.L., will recite selections from "Peg o' my Heart," "Cargoes" and "Water."

Of the vaudeville concert on Saturday evening the second portion of the programme will be supplied by Perce Skinner's Musical Entertainers. It is

a combination that is bound to please. Variety is the keynote, whether the items to be rendered are vocal, mouth-organ, banjo or mandolin. Two of these artists are well known at 3YA. They are Messrs. Skinner and Birch, whose banjo and mandolin contributions have enlivened many a programme. Mr. H. Edwards, who sings popular songs, and supplies the necessary patter when required, has been a Fuller artist, while Messrs. P. Cole and G. Naylor are well named "harmony specialists" with a penchant for mouth organs.

In the first portion of Saturday evening's programme appear the names of some popular entertainers—Miss Mabel Thomas and Mr. Dave McGill, Mr. Robert Lake (baritone), Mr. Charles Lawrence (who sings popular foxtrot songs and ballads) and the Broadcasting Trio.

At the studio concert, after the broadcast of the Presbyterian service on Sunday evening, Mrs. Frank O'Brien (soprano), Miss Nancy Bowden (contralto), Mr. Francis Jones (baritone), and Mr. M. B. Withers (clarinet) will be the contributing artists.

4YA NOTES

On Sunday 4YA will relay the services from the First Church of Otago, when the preacher will be Dr. E. N. Merrington.

For the next few weeks, at the conclusion of the church services each Sunday, a sacred studio concert and service will be provided by the International Bible Students' Association. Most of the best artists in Dunedin are being engaged for these performances.

A first-class and long programme will be broadcast on Tuesday evening. The majority of the numbers will be provided by the Band of the First Battalion, Otago Regiment, which is under the direction of Mr. Liaw O. Asten. It is the leading full military band in Otago. A particularly fine programme has been arranged. Among other items by the band will be heard a cornet solo, "I Passed by Your Window," and a piccolo solo, "The Wren in the Poplars."

Interspersed between the band numbers will be solo items by some leading professional artists. Mr. Allan Young, well-known entertainer, will be heard in some humorous stories, and two of his very popular Hebrew imitations. Miss Madge Yates, one of the leading elocutionists in New Zealand, will be heard in recitals. Mr. R. B. Macdonald, one of Dunedin's leading baritones, will present a group of songs, and Mr. Frank Stewart (tenor) will also provide numbers.

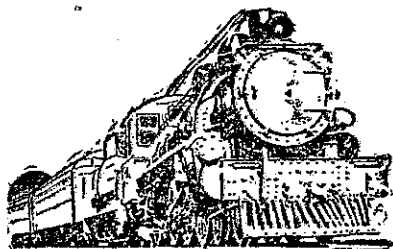
Another artist on Tuesday's programme will be Miss Christina Green, who was a pupil of Evelyn Howard Jones, the greatest exponent of Brahms in England, and also a pupil of Dale Smith, baritone of the British Broadcasting Company, and one of the holders of contracts with the British Broadcasting Company. Miss Green passed an audition test at 21.0, but was unable to perform owing to her departure for New Zealand. Recently while on holiday she sang at 3YA. Miss Green is the musical directress at the Archerfield Girls' School.

Thursday's programme will be provided by some of Dunedin's leading artists. Vocal numbers will be heard by Miss Agnes Guy (soprano), Miss Dorothy Skinner (contralto), Mr. F. C. Cooper (bass), and Mr. L. M. Cache-maille (baritone). Miss Marjorie Watts will render pianoforte solos, and Mr. Malcolm Robillard will contribute several solos on his cello.

Pastor W. D. More will give a humorous address during Thursday's concert session.

(Continued on Page 15.)

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NOTES AND COMMENTS

(By "Switch.")

A hydrometer will enable you to test an accumulator, or wet battery, quite well, if not better, than a voltmeter. If a wet "A" battery be allowed to stand in a discharged condition for very long it will be seriously attacked by sulphate and may be injured rather badly.

An important judgment was given recently in the High Court, when £150 damages were awarded to the author of the musical play "The Little Michus," which had been broadcast by the B.B.C. This was deemed to have infringed the author's copyright.

On Wednesday, December 28, last, Harry Lauder made his final appearance before the microphone in London before sailing for Australia and New Zealand. The public kept him going for three-quarters of an hour. Sydney stations may possibly engage Sir Harry Lauder to broadcast some of his wonderful Scotch wit, in which case we may look forward to something worth while.

One of the commonest causes of poor reception in a crystal set is a dirty contact at the lead in or the earthing switch.

Many radio fans have desired to know the polarity of the ordinary torch battery contacts in order that they may be used as a makeshift. The long contact is the negative and the short one is the positive.

Professor Bergonie, who invented the X-ray and died from X-ray burns in February, 1926, had, before his death, invented a radio chair. Though his invention was patented in 1911, it has only been recently that hospitals in Sydney, Melbourne, Adelaide, Perth, and hospitals in England, Germany, and America have been fitted with the Bergonie chair.

An ordinary flash-lamp bulb connected in the "B" battery negative lead makes a very good fuse and may save your valves in the case of a short circuit.

If you are running long leads through the house so that the loudspeaker can be used in different rooms, it is a real economy to use a choke-coupled or a transformer coupled output to prevent H.T. leakage.

The proper way to disconnect battery leads is at the battery end, not at the set end. If the wires are separated from the set end, and left on at the battery end, there is a great danger of shorting the battery.

Where trams or other electric machinery cause interference, it is often found that a counterpoise gives better results than the usual waterpipe or buried plate earth.

The Sydney "Wireless Weekly" publishes the following:—"Mrs. Ruth E. King, c/o Mrs. F. Murray, P.O. Box 199, Greymouth, N.Z., is anxious to learn the whereabouts of her brother, Bertram P. Adams. He was a wireless officer, and was last seen in Australia. Will anyone knowing his address please communicate with Mrs. King?"

Details have been published of a proposal for a new wireless tower in Berlin, which will be completed by 1930. The tower will be 2160 feet high, more than twice the height of the Eiffel Tower, with a restaurant on a slowly revolving floor so that guests can watch the changing view in comfort. A suspended railway will carry passengers from the height of the restaurant across the woods and water to Potsdam. The light on the top will be visible 100 miles away.

Be careful when using ammonia for cleaning the sides and tops of accumulators. If any ammonia should come into contact with the electrolyte, the latter will become neutralised.

Every time a pair of telephones is dropped on the floor the magnetism is weakened, and the life of the telephone made shorter.

When a set which has hitherto been well behaved starts to howl and distort, the most likely cause of the trouble is the run-down condition of the "B" battery.

Audio-frequency amplification will give greater volume on local stations, but radio-frequency amplification has the characteristic of being able to amplify a weak signal, thereby increasing the range of the receiver.

A constant humming noise is generally due to the fact that either the aerial or the earth lead, or the set itself, is too close to the electric light mains. (Remember, that these are sometimes concealed in the wall.)

Sometimes it does not matter in the least if the "A" battery has been accidentally connected the wrong way round—i.e., its negative to L.T. plus, on the set, and its positive to L.T. negative. Occasionally, as a matter of fact, this improves reception.

All ship stations with amateur calls place an X before their usual intermediate, e.g., Australia 3AA at sea, calling U.S., 1AW, would send "1AW NUXOA 3AA." The reply would be "3AA XOANU 1AW." The O.A., of course, is the prefix for Australia, and NU is the prefix for U.S.A.

"Do not set your watches several times a day by the wireless," writes a prominent watchmaker. Doing this, he states, will only serve to make the watch more inaccurate than before, irony!

Sunday, February 19th

1YA AUCKLAND (333 METRES)—SUNDAY, FEBRUARY 19.

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: Literary selection by Mr. Culford Bell.
4.30: Close down.
6.0: Children's song service, conducted by Uncle Leo.
6.55: Relay of evening service from Church of Christ. Preacher, Mr. Aldridge; organist, Mr. Ivan Lambert.
To be followed by special concert from studio:—
8.15: Vocal quartet—St. Andrew's Quartet, "Evening and Morning."
8.20: Bass solo—Mr. Arthur Colledge, "It Is Enough" from "Elijah" (Mendelssohn).
8.25: Instrumental trio—Bosworth-Hemus-Towsey Trio, "First Movement, Allegro, from Trio in B Flat Major, No. 9" (Haydn).
8.35: Vocal duet—Misses A. Taylor and P. Gribben, "Lead, Kindly Light."
8.39: Tenor solo—Mr. Robert Peter, "Ye People Rend Your Hearts" (Mendelssohn).
8.44: Contralto solo—Miss Phyllis Gribben, "Woe Unto Them" (Mendelssohn).
8.49: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Andante and Finale from Trio in B Flat Major, No. 9" (Haydn).
8.59: Vocal quartet—St. Andrew's Quartet, "Prologue" from "The Holy City" (Gaul).
9.4: A thought.
9.6: God Save the King.

2YA WELLINGTON (420 METRES)—SUNDAY, FEBRUARY 19.

- 6 p.m.: Children's song service, conducted by Uncle Ernest.
6.55: Relay of evening service from St. Thomas's Anglican Church. Preacher, Rev. C. V. Rooke; organist and choirmaster, Mr. W. A. Collie, L.L.C.M.
8.30 (approx.): Studio concert.
Quartet—William Renshaw Quartet, "A Spring Song" (Pinsuti).
Instrumental quartet—Symons-Ellwood String Quartet, with assistance of Mr. Gordon Short, "Scherzo from Quintet" (Dvorak).
Bass solo—Mr. Wilbur Davies, "The Sea Road" (Wood).
Vocal duet—Miss Nora Greene and Mr. William Renshaw, "Beauty's Eyes" (Tosti).
Instrumental quartet—Symons-Ellwood String Quartet, with assistance of Mr. Gordon Short, "Finale from Quintet" (Dvorak).
Soprano solo—Mrs. Amy Dunn, "Spring Had Come" from "Hiawatha" (Coleridge-Taylor).
Tenor solo—Mr. William Renshaw, "Absent Yet Present" (White).
Symons-Ellwood String Quartet, "Melody in F" (Rubinstein).
Contralto solo—Miss Nora Greene, "O, Flower Divine" (Wood).
Vocal quartet—William Renshaw Quartet, "Across the Bar" (Sampson).

3YA CHRISTCHURCH (306 METRES)—SUNDAY, FEBRUARY 19.

- 5.45 p.m.: Children's song service from 3YA Studio by Uncle Sam, assisted by Congregational Sunday School scholars.
7.0: Relay of evening service from Durham Street Methodist Church. Special preacher, selected from New Zealand Methodist Church Conference. Organist and choirmaster, Mr. Ernest Firth, F.R.C.O.
After-service concert from 3YA Studio:—
Instrumental trio—Christchurch Broadcasting Trio, "Allegro Vivace from Trio in D Major" (Beethoven).
Soprano solos—Miss Ella Skurr, (a) "Angels Ever Bright and Fair" (Handel); (b) "Come Unto Him" from "The Messiah" (Handel).
Instrumental trios—Christchurch Broadcasting Trio, (a) "The Wood Nymph" (Lind); (b) "Minuetto" (Boressen).
Soprano solo—Miss Ella Skurr, "Fear Ye Not, O Israel" (Buck).
Instrumental trios—Christchurch Broadcasting Trio, (a) "Octobre" (Tschalkowsky); (b) "Gavotte" (Leclair).
God Save the King.

4YA DUNEDIN (463 METRES)—SUNDAY, FEBRUARY 19.

- 5.45 p.m.: Children's song service by Big Brother Bill and choir of young people.
7.0: Relay of evening service from First Church of Otago. Preacher, Dr. E. N. Merrington; organist, Dr. V. E. Galway.
8.15: Studio concert.
9.15: Close down.

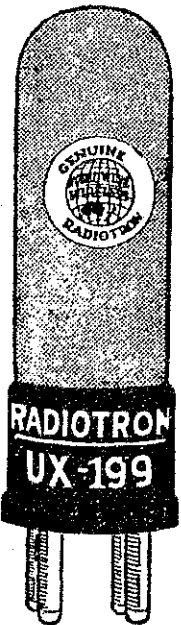
Monday, February 20th

1YA AUCKLAND (333 METRES)—MONDAY, FEBRUARY 20.

SILENT DAY.

2YA WELLINGTON (420 METRES)—MONDAY, FEBRUARY 20.

- 2 p.m.: Chimes of the General Post Office clock, Wellington.
2.1: Relay of resumes of cricket match, Wellington v. Australia from Basin Reserve—Mr. A. Varney announcing. Interspersed with selected gramophone items, and lecturette by Mrs. Stevens, of Messrs. Kirkcaldie and Stains, Ltd., on "Fashions."



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BOX 830.

- 6.0: Children's hour—Toby and Jeff and party of entertainers.
7.0: News session, information, and reports.
7.40: Latest cricket information.
8.0: Chimes of the General Post Office clock, Wellington.
8.1: Overture—"Minuet" (Boccherini).
8.5: Vocal quartet—Ariel Singers, "Isle of Beauty" (Coleridge-Taylor).
8.9: Elocution—Mr. Eric North, "Chant Pagan" (Kipling).
8.14: Mezzo-contralto solo—Miss Ngaire Coster, "L'Andovina" (Puzzi).
8.18: Instrumental trio—Symons-Ellwood-Short Trio, "Andante Cantabile" from "C Major Trio" (Mozart).
8.28: Vocal duet—Miss J. Briggs and Mr. Roy Hill, "Mountain Lovers" (Squire).
8.32: Violin solo—Miss Ava Symons, Welsh air, "The Dove" (Somervell).
8.36: Lecturette—Mr. Chas. Wheeler, "Politics and the Humour of It."
8.48: Mandolin Band—Mrs. Mildred Kenny and party, (a) "Spanish Moon" (Terese); (b) "Dorinda Polka" (Grimshaw).
8.56: Weather forecast.
8.57: Humorous quartet—Ariel Singers, "Old Mother Hubbard" (Webster).
9.0: Elocution—Mr. Eric North, "A Smuggler's Song" (Kipling).
9.4: Bass solo—Mr. J. M. Caldwell, "The Smuggler's Song" (Note: This is Kipling's famous song, set to music, and follows the recitation for the sake of contrast.)
9.8: Guitar Band—Mrs. Mildred Kenny and party, (a) "Hilo March" (Parle); (b) "Hawaiian Islands March" (Cusenza).
9.16: Tenor solos—Mr. Roy Hill, (a) "Windy Nights" (Stanford); (b) "Heigh, Ho, the Wind and the Rain" (Quilter).
9.20: Instrumental trio—Symons-Ellwood-Short Trio, "Allegro from C Major Trio" (Mozart).
9.28: Soprano solo—Miss J. Briggs, "Villanelle" (Dell-Acqua).
9.32: Violin solo—Miss Ava Symons, "Serenade" (Drda).
9.36: Bass solos, with quartet—Mr. J. M. Caldwell, (a) "The Drunken Sailor"; (b) "Rio Grande" (sea chanties arranged by Terry).
9.42: Lecturette—Captain Hugo, "A Fire Protection Fallacy and its Remedy."
9.54: Vocal duet—Misses Briggs and Coster, "Two Tuscan Folk Songs" (arranged Cavacciotti).
10.0: Banjo Band—Mrs. Mildred Kenny and party, (a) "Sunflower Dance" (Ossman); (b) "Lancashire Clogs" (Grimshaw).
10.8: Vocal quartet—Ariel Singers, "The Victor's Song" (Mendelssohn).
God Save the King.

3YA CHRISTCHURCH (306 METRES)—MONDAY, FEBRUARY 20.

- 3 p.m.: Afternoon session—Selected Studio items.
4.30: Close down.
6.0: Children's hour—Uncle Jack and Aunt Edna. Bedtime stories and birthday greetings.
7.15: News and reports.
8.0: Chimes. Relay of orchestral selections from Strand Picture Theatre Orchestra, under the conductorship of Mr. Harry Ellwood.
Studio concert by Derry's Military Band, under the conductorship of Mr. E. C. Derry, assisted by 3YA artists.
8.10: March—The Band, "B.B." (Horne).
8.16: Male quartets—Beckenham Male Quartet, (a) "Thuringian Volkslied" (Abt); (b) "Little Tommy Went a Fishing" (Macy).
8.23: Waltz—The Band, "Appassionata" (Ketyby).
8.29: Baritone solo—Mr. F. S. Jackson, "Molly o' Donegal" (Austin).
8.33: Military fantasia—The Band, "Our Soldiers" (Moore).
8.43: Contralto solos—Mr. D. W. Stallard, (a) "Have I Lost Thee?" (Gluck); (b) "Vale" (Russell).
8.49: Fox-trot—The Band, "Orient Moonlight" (Seamer).
8.54: Tenor and baritone duet—Messrs. E. R. Pitman and K. G. Archer, "Down the Vale" (Moir).
8.57: Humour—Mr. James Laurenson, "Lecture on the Face" (Robey).
9.2: Weather report.
9.4: Selection—The Band, "Spring Song" (Mendelssohn).
9.10: Male voice quartet—Beckenham Male Quartet, (a) "Every Rustling Tree" (Kulah); (b) "Piccaniny Lullaby" (Macy).
9.16: Descriptive fantasia—The Band, "A Motor Ride" (Bidgood).
9.26: Baritone solo—Mr. W. H. Odell, "The Little Irish Girl" (Lohr).
9.29: Male quartet—Beckenham Male Quartet, "Farmer Gray" (Leslie).
9.34: Selection—The Band, "Anvil Chorus" from "Il Trovatore" (Verdi).
9.40: Contralto solo—Mrs. D. W. Stallard, "She is Far from the Land" (Lambert).
9.44: One-step—The Band, "Hilo" (Finlay).
9.49: Male quartet—Beckenham Male Quartet, "Stars of the Summer Night" (Hatton).
9.53: Recital—Mr. James Laurenson, "The Sign of the Old Black Eye" (Lawson).
9.57: March—The Band, "Dunlap Comandery" (Hall).
10.2: Male quartet—Beckenham Male Voice Quartet, (a) "Me and My Shadow" (Jolson); (b) "Good Night, Ladies" (Hall).
God Save the King.

4YA DUNEDIN (463 METRES)—MONDAY, FEBRUARY 20.

SILENT DAY.

Tuesday, February 21st

1YA AUCKLAND (333 METRES)—TUESDAY, FEBRUARY 21.

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: A literary selection by the announcer.
6.0: Children's hour—Uncle Leo.
7.15: Talk on "Examples of Actual Results of Top-Dressing," by Mr. H. H. Edwards.
7.30: News and reports.
8.0: Chimes.
8.1: Relay of orchestral overture from Majestic Theatre—J. Whiteford-Waugh, conductor.
8.6: Soprano solos—Miss Nancey Hanna, "Scenes That Are Brightest" from "Maritana" (Wallace).
8.10: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Trio, Op. 1, in E Flat—Allegro" (Beethoven).
8.19: Baritone solo—Mr. Trevor Lewis, "Star of Eve" from "Tannhauser" (Wagner).
8.24: Relay of musical interlude from Majestic Theatre.
8.29: Contralto solo—Madame Irene Ainsley, "Serenata" (Braga), with violin obbligato by Miss Ina Bosworth.
8.34: Soprano solo—Miss Nancey Hanna, "Songs My Mother Taught Me" (Dvorak).
8.39: Violin solos—Miss Ina Bosworth, (a) "Menuet" (Beethoven); (b) "Rondino" (Brown).
8.47: Relay of vocal and instrumental interlude from Majestic Theatre.
9.4: Weather forecast.
9.6: Third of a series of talks on "Old New Zealand," by Mr. A. B. Chappeil, M.A., "The Coming of the Whalers."
9.22: Tenor solo—Mr. Ernest Snell, "A Summer Night" (Goring-Thomas).
9.26: Vocal duet—Madame Irene Ainsley and Miss Nancey Hanna, "Sainted Mother" from "Maritana" (Wallace).

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WELLINGTON.

Week - All Stations - to Feb. 26

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- 9.31: Instrumental trio—Bosworth-Hemus-Towsey Trio, overture to "Flying Dutchman" (Wagner).
- 9.41: Prison Scene from "Maritana" (Wallace), produced under the direction of Madame Irene Ainsley. Cast: Lazarillo, Madame Irene Ainsley; Don Caesar, Mr. John Prisk; Don Jose, Mr. Trevor Lewis.
- The Prison Scene takes place in Act II. Don Caesar and the boy Lazarillo are in their cell. To Don Caesar comes Don Jose. Don Caesar here sings the famous song, "Let Me, Like a Soldier Fall." He cannot reconcile himself to being hanged. Don Jose makes a proposition. If Don Caesar will go through the ceremony of marriage with a veiled lady, Don Jose will get the sentence of hanging changed to the more honourable one of being shot. The wedding duly takes place, and Don Caesar takes his stand in front of the firing party. The faithful Lazarillo has, however, removed the bullets from the guns, and Don Caesar's last dying groans are but feigned ones. Don Jose, intent on compromising the King, has taken Maritana to a ball. Don Caesar follows as soon as his executioners have left him. He arrives at the palace, and Don Jose, though astounded at the presence of the man he thought dead, immediately sizes up the situation and unveils and presents as Don Caesar's bride, the elderly Marchioness de Montiflore. Don Caesar is taken aback—not thus he imagined the mysterious veiled lady.
- Lazarillo—"Alas, Those Chimes."
- Lazarillo and Don Caesar—"Whither That I?"
- Don Caesar—"Let Me, Like a Soldier Fall."
- Don Jose—"In Happy Moments."
- Lazarillo, Don Caesar, and Don Jose—"Turn On, Old Time."
- And dialogue.
- 10.0: A thought.
- 10.2: God Save the King.

2YA WELLINGTON (420 METRES)—TUESDAY, FEBRUARY 21.

- 3 p.m.: Chimes of the General Post Office clock, Wellington.
- 3.1: Selected gramophone items.
- 3.15: Lecture—Mrs. Barrington, of Messrs. Turnbull and Jones, Ltd., "Electric Cooking."
- 3.30: Selected gramophone items.
- 4.0: Lecture—Dr. L. A. Line, "First Aid."
- 4.15: Selected gramophone items.
- 5.0: Close down.
- 6.0: Children's hour—Uncle Jasper. Birthday greetings, and programme of songs, duets, and choruses by the pupils of Miss Peterson. A merry hour for all.
- 7.0: News session, market reports, and sports results.
- 8.0: Chimes of the General Post Office clock, Wellington.
- 8.1: Overture—"Les Millions D'Arlequin" (Drigo).
- 8.5: Vocal quartet—The Orpheus Quartet, "Just a Song at Twilight" (Molloy).
- 8.9: Hawaiian guitars—Berthold and Bent, (a) "Lay My Head Beneath a Rose"; (b) "Kawahia Waltz."
- 8.17: Contralto solo—Miss Lily Mackie, "Just a-wearing for You" (Bond).
- 8.21: Instrumental trio—Symons-Ellwood-Short Trio, "Vivace Double Concerto" (Bach).
- 8.31: Vocal duet—Mrs. Alice Harris and Mr. Len. Barnes, "Gloir Gloir" (Audran).
- 8.35: Novelty piano solo—Mr. James Skedden, "Nola."
- 8.39: Elocution—Miss Violet Wilson, "After the Battle" (Dobson).
- 8.43: Cello solo—Mr. Geo. Ellwood, "Elegie" (Faure).
- 8.48: Tenor solo—Mr. Arthur Coe, "Where'er You Walk" (Handel).
- 8.52: Weather forecast.
- 8.53: Humorous novelty—Pat and Walter, "Blossom's Film Scenario."
- 9.2: Organ recital—Mr. H. Temple White, (a) "Andante in D" (Plumpton); (b) "Spring Song" (Mendelssohn); (c) "March Modern" (Lemare).
- 9.17: Vocal quartet—The Orpheus Quartet, "Tell Me, Pretty Maiden" (Stewart).
- 9.21: Instrumental trio—Symons-Ellwood-Short Trio, "Largo and Allegro—Double Concerto" (Bach).
- 9.31: Baritone solo—Mr. Len. Barnes, "West Country Lad" (German).
- 9.35: Cello solo—Mr. Geo. Ellwood, "Scherzo" (Van Goens).
- 9.39: Vocal duet—Miss Lily Mackie and Mr. Arthur Coe, "Maying" (Nevin).
- 9.43: Hawaiian guitars—Berthold and Bent, (a) "Hawaiian Dreams"; (b) "Honolulu Moon."
- 9.51: Humour—Miss Violet Wilson, (a) "Nothing Suited Him"; (b) "The Inventor's Wife" (Corbett).
- 9.55: Novelty piano solo—Mr. James Skedden, "Twinkles."
- 9.59: Soprano solo—Mrs. Alice Harris, "Rose in the Bud" (Foster).
- 10.3: Vocal quartet—The Orpheus Quartet, "Carnevale" (Rossini).

3YA CHRISTCHURCH (306 METRES)—TUESDAY, FEBRUARY 21. SILENT DAY.

4YA DUNEDIN (463 METRES)—TUESDAY, FEBRUARY 21.

- 3 p.m.: Afternoon session—Town Hall chimes. Selected Studio items.
- 3.1: His Master's Voice recital.
- 3.30: Social notes and news.
- 3.40: Studio music.
- 4.0: Talk on the "Domestic Uses of Electricity," by a representative of Turnbull and Jones, Ltd.
- 4.15: His Master's Voice recital.
- 4.30: Close down.
- 6.0: Town Hall chimes.
- 6.1: Children's hour—Big Brother Bill and young entertainers.
- 7.15: News session.
- 7.30: Address.
- 8.0: Town Hall chimes. Band concert, with assisting artists by Band of the First Battalion, Otago Regiment, under the conductorship of Mr. Llew O. Asten.
- 8.1: March—The Band, "Distant Greeting" (Doring).
- 8.6: Overture—The Band, "Light Cavalry" (Suppe).
- 8.14: Humorous recital—Mr. Allan Young, "Levin'sky the Politician" (Adams).
- 8.22: Mezzo-soprano solos—Miss Christina Green, (a) "Thou Art Like a Lovely Flower" (Schumann); (b) "The Lotus Flower" (Schumann).
- 8.28: Waltz—The Band, "Valse Septembre" (Godin).
- 8.35: Recital—Miss Madge Yates, "Annabel Lee" (E. A. Poe).
- 8.40: Baritone solo—Mr. R. B. Macdonald, "Mine Enemy" (Rudd).
- 8.43: Cornet solo—The Band, "I Passed by Your Window" (Brahe).
- 8.46: Piccolo solo—The Band, "The Wren in the Poplars."
- 8.52: Tenor solos—Mr. Frank Stewart, (a) "The Wind" (Spross); (b) "Five Little Piccininnies" (Anthony).
- 8.58: Humorous stories—Mr. Allan Young.
- 9.4: Selection—The Band, "Classica" (Ewing).
- 9.19: Recital—Miss Madge Yates, "Christ in Flanders."
- 9.24: Mezzo-soprano solo—Miss Christina Green, "The Little Silver Ring" (Chaminade).
- 9.28: Intermezzo—The Band, "Alsatian Love Song—Cochels" (Reeves).
- 9.34: Baritone solos—Mr. R. B. Macdonald, (a) "The Last Call" (Sanderson); (b) "Tis Good to be Alive" (Cowell).

- 9.40: Selection—The Band, "The Merry Widow" (Lehar).
- 9.55: Humorous recital—Mr. Allan Young, "Levin'sky's Wedding" (Rose).
- 10.5: Tenor solo—Mr. Frank Stewart, "The Trumpeter" (Dix).
- 10.8: Dance—The Band, "Mystic Beauty" (Finck).
- 10.15: Recital—Miss Madge Yates, "Shopping."
- 10.20: March—The Band, "The Stars and Stripes" (Sousa).
- 10.25: God Save the King.

Wednesday, February 22nd

1YA AUCKLAND (333 METRES)—WEDNESDAY, FEBRUARY 22.

- 3 p.m.: Afternoon session—Selected Studio items.
- 4.0: Literary selection by the Announcer.
- 4.30: Close down.
- 6.0: Children's hour, conducted by Uncle Tom.
- 7.15: News and reports.
- 8.0: Chimes.
- 8.1: March—Auckland Artillery Band, "The Twentieth Century" (Ord Hume).
- 8.9: Baritone solo—Mr. F. Sutherland, "I Am a Cavalier" (Mendelssohn).
- 8.14: Overture—Auckland Artillery Band, "Light Cavalry" (Suppe).
- 8.25: Soprano solo—Miss Phyllis Hazell, "Stride La Vampa" from "Il Trovatore" (Verdi).
- 8.30: Selection—Auckland Artillery Band, "Classic Gems" (Rimmer).
- 8.39: Vocal duet—The Hazell-Sutherland Duo, "Venetian Song" (Tosti).
- 8.44: Brass quartet—Messrs. Davies, Hogg, Roe, and Edgar, "Remembrance" (Round).
- 8.52: Selection—Auckland Artillery Band, "The Piper's Wedding" (Thayne).
- 9.10: Weather forecast.
- 9.12: Baritone solo—Mr. F. Sutherland, "Give a Man a Horse He Can Ride" (Head).
- 9.17: Selection—Auckland Artillery Band, "The Arcadians" (Monckton).
- 9.27: Soprano solo—Miss Phyllis Hazell, "Still is the Night" (Bohm).
- 9.31: Selection—Auckland Artillery Band, "Pirates of Penzance" (Sullivan).
- 9.40: Gavotte—Auckland Artillery Band, "Les Clouches des St. Malo" (Rimmer).
- 9.48: Vocal duet—Hazell-Sutherland Duo, "O, Divine Redeemer" (Gounod).
- 9.53: March—Auckland Artillery Band, "Sons of the Brave" (Bidgood).
- 10.0: A thought.
- 10.2: God Save the King.

2YA WELLINGTON (420 METRES)—WEDNESDAY, FEBRUARY 22. SILENT DAY.

3YA CHRISTCHURCH (306 METRES)—WEDNESDAY, FEBRUARY 22.

- 3 p.m.: Afternoon concert—Selected Studio items.
- 4.30: Close down.
- 6.0: Children's hour—Uncle Peter and Mother Hubbard. Bedtime stories, songs, and birthday greetings.
- 7.15: Addition stock market reports.
- 7.30: News and reports.
- 8.0: Chimes. Relay of orchestral selections from Grand Picture Theatre Orchestra, under the conductorship of Mrs. K. Black.
- Travelogue of Scotland.
- Studio concert by Mr. A. G. Thompson's Dulcet Quartet, with dialogue leading up to and introducing each locality referred to in programme.
- 8.15: Baritone solos—Mr. A. G. Thompson, (a) "Sing to Me the Auld Scotch Songs" (Swan); (b) "A Hundred Pipers" (Nairne).
- 8.22: Scottish bagpipes—Mr. Angus MacKintosh, (a) "The Blue Bonnets Are Over the Border" (traditional); (b) "The Campbells Are Coming."
- 8.26: Vocal quartet—The Dulcet Quartet, "Annie Laurie" (MacKenzie).
- 8.29: Instrumental trio—Christchurch Broadcasting Trio, "First Movement from D Minor Trio" (Mendelssohn).
- 8.39: Soprano solos—Miss Mary Shaw, A.R.C.M., (a) "Bonnie Banks of Loch Lomond"; (b) "Jessie, the Flower of Dumbane" (MacKenzie).
- 8.47: Cello solo—Mr. Harold Beck, "Call the Yowes to the Knowes."
- 8.52: Tenor solos—Mr. T. G. Rogers, (a) "Mary of Argyle"; (b) "Thou Bonnie Wood of Craigielea" (MacKenzie).
- 8.59: Weather forecast.
- 9.0: Scottish bagpipes—Mr. Angus MacKintosh, (a) "My Ain Wee Hoose"; (b) "Duntroon"; (c) "Gillie Callum."
- 9.6: Contralto solo—Miss Nellie Lowe, "Flora MacDonald's Lament" (MacKenzie).
- 9.12: Instrumental trios—Christchurch Broadcasting Trio, (a) "Afton Water"; (b) "Flowers of the Forest"; (c) "Ye Banks and Braes."
- 9.23: Baritone solo—Mr. A. G. Thompson, "Minnie's Song" (Wallace).
- 9.28: Recital—Mr. Campbell Brown, "Saunders McGlaskin."
- 9.35: Tenor solo—Mr. T. G. Rogers, "McGregor's Gathering" (MacKenzie).
- 9.42: Cello solo—Mr. Harold Beck, "Turn Ye to Me."
- 9.49: Contralto solos—Miss Nellie Lowe, (a) "Piper o' Dundee"; (b) "Afton Water" (MacKenzie).
- 9.56: Scottish bagpipes—Mr. Angus MacKintosh, "Bonnie Dundee."
- 10.0: Recital—Mr. Campbell Brown, "A Guid Scotch Nicht" (Ogilvie).
- God Save the King.

4YA DUNEDIN (463 METRES)—WEDNESDAY, FEBRUARY 22. SILENT DAY

Thursday, February 23rd

1YA AUCKLAND (333 METRES)—THURSDAY, FEBRUARY 23.

- 3 p.m.: Afternoon session—Selected Studio items.
- 4.0: Literary selection by the Announcer.
- 4.30: Close down.
- 6.0: Children's hour, conducted by Peter Pan.
- 7.15: News and reports, book review.
- 8.0: Chimes.
- 8.1: Relay of orchestral overture from Rialto Theatre—Henry C. Engel, conductor.
- 8.10: Baritone solo—Mr. H. Barry Coney, "Hear Me, Ye Winds and Waves" (Handel).
- 8.14: Soprano solo—Miss Lola Solomon, "Deputis le Jour" from "Luiise" (Charpentier).
- 8.18: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Trio, Op. 1, No. 1, in E Flat—Adagio and Scherzo" (Beethoven).
- 8.24: Contralto solo—Miss Mina Caldwell, "In the Highlands" (Peel).
- 8.27: Vocal quartet—Premiere Quartet, "Three Fishers" (Hullah).
- 8.31: Tenor solos—Mr. Birrell O'Malley, (a) "I Heard You Singing"; (b) "Morning."
- 8.38: Cello solo—Miss Lalla Hemus, "Gavotte" (Popper).
- 8.42: Talk on "Humour in Court," by Mr. R. Sellar.
- 8.54: Weather forecast.
- 8.56: Relay of orchestral interlude from Rialto Theatre.
- 9.6: Contralto solos—Miss Mina Caldwell, (a) "Yearning" (Tschakowsky); (b) "The Silver Ring" (Chaminade).
- 9.13: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Morning" and "Death of Ase" from "Peer Gvnt Suite" (Greig).
- 9.21: Vocal and humour—The Aquinths, thirty minutes' drawing-room entertainment.
- 9.51: Baritone solo—Mr. Barry Coney, "Tis I" (Pinsuti).
- 9.55: Soprano solo—Miss L. Solomon, "Kathleen Mavourneen" (Crouch).
- 9.59: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Trio, Op. 1, No. 1, in E Flat—Finale" (Beethoven).
- 10.7: Vocal quartet—The Premiere Quartet, "The Lost Chord" (Sullivan).
- 10.11: A thought.
- 10.13: God Save the King.

2YA WELLINGTON (420 METRES)—THURSDAY, FEBRUARY 23.

- 2.30 p.m.: Relay description of Anthony Wilding Shield tennis match, Wellington v. Canterbury.
- Interpersed with selected gramophone items.
- 6.0: Children's hour—Uncle Sandy.
- 7.0: News session, market reports, and sports results.
- 7.30: Lecture—Mr. C. O. Jorgensen, masseur and chiropodist, "A Few of the Common Foot Troubles."
- 8.0: Chimes of the General Post Office clock, Wellington.
- 8.1: Overture—Wellington Artillery Band, "Dear Old Glory March" (Evans).
- 8.6: Coon song—The Mellow Fellows, "When You Hear De Banjo" (Scott-Gatty).

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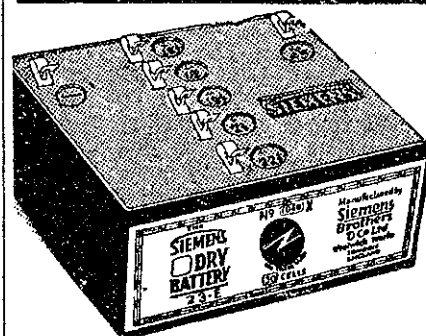
An American radio manufacturing company announces the development of a new five-prong socket for use with the new five-prong valves. This socket possesses some exclusive features. It has a guide groove, by means of which the insertion of the valve into the socket is greatly facilitated, particularly so when the tube socket is located within a shield or can devoid of sufficient light. The socket is adaptable for baseboard or subpanel mounting, regardless of the subpanel or baseboard material. When used for subpanel mounting, it is unnecessary to resort to the use of fly-cutter. The socket contacts slide through small holes drilled into the subpanel.

Many and varied are the ideas put forward for removing dust from the plates of the condenser and other internal parts of the set where dirt will cause losses and noises. The use of an ordinary duster may injure the delicate coils or condenser plates, and do more harm than good. An excellent method is to use the vacuum cleaner, utilising one of the attachments provided for working in small places.

A gentleman who is a radio dealer in San Pedro, the port of Los Angeles, California, writes to thank one of the Australian broadcast stations for their programme, which he says is greatly enjoyed by all, since American musical programmes are composed mostly of advertising matter. He offers 500 dollars for every programme of the same quality put over the air, and further invites the Australian announcer to drop into his home when next he is at San Pedro.

The ultimate elimination of 300 American broadcasting stations is promised by Mr. Pickard, chairman of the United States Federal Radio Commission, who states that the radio channels can be cleared only by this means. Plans for the great shut down will be begun shortly.

It costs from 5000 to 10,000 dollars a month to operate a broadcasting station in the United States.



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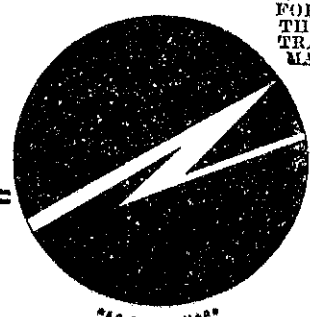
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Programmes Continued

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Many radio fans find that after their storage battery has been in use for a short period, a greenish, or, sometimes, whitish, substance gathers about the positive terminal, while a small quantity of a grey substance forms at the negative terminal. This coating prevents the obtaining of a good contact, and must be thoroughly scraped off, or wiped off with a rag dampened with liquid ammonia. The best way of overcoming this trouble is to coat the terminals of the battery with vaseline. It is well to put vaseline on the battery clips also, as it protects the metal from the action of the electrolyte and thus prevents the formation of the unwanted substances which make poor electrical contacts.

Where a reamer is required but not available, a pair of scissors comes in handy. If the hole in a piece of wood or bakelite is just a little too small, one of the blades of the scissors should be inserted and turned in a circular motion so that the sharp edge will enlarge the hole evenly.

An American newspaper lauds the arrangements made in Russia to install community sets in order that the public may listen-in. At some length the article describes how every hamlet, village, and city is being fitted with high-powered receivers, and a well-known member of the Chicago Radio Commission insists that a great amount of credit is due to the instigator of this idea.

Where markings are required on the panel of a home-built radio set, these are easily made by scratching the panel with a scribe or other sharp instrument, and filling the scratch with white chalk or crayon. The crayon is simply rubbed over the surface, enough adhering to the scratch to make a clear marking.

Many beginners at constructional work find it rather difficult to punch-mark a panel accurately as a preliminary to drilling. Even if the marking out has been done with considerable care and accuracy many of the centres do not lie, as they should, at the junction of the cross lines made with the scribe. One of the commonest causes of inexact centre punching is to be found in the use of a tool that is unsuitable for the purpose. For wireless work, where most of the holes are made with small drills, the best type of punch is one that tapers gently to a fine point. The more or less round-pointed punch with a steep taper is not at all what is wanted.

It is noteworthy that the Scandinavian listeners are much interested in the progress of Empire broadcasting. When a special programme from 2FC was rebroadcast throughout Great Britain recently, thousands of listeners in Scandinavia tuned in to Davenport, England. Though speech was not too clear, the musical items came through very well.

Discussing conditions in Western Australia, Mr. Baty, of Perth, a recent visitor to Sydney, stated that radio is in a very bad position, and, according to his advice, licences, which are now approximately 4,000, are dropping at the rate of from fifty to one hundred per month. The trouble is that listeners-in in the Western State are generally unable to receive broadcasting from the East Australia. As 6WV is on 1250 metres, and it is difficult to design a receiver which is efficient on both long and short waves, business is suffering as the result. At present matters are at a deadlock, as according to Mr. Baty, 6WV will not consider a reduction in wave-length to bring the station into line with the other Australian stations.

When charging storage batteries, always remove the vent caps. These caps help to keep away the air from the electrolyte in the battery, thus preventing evaporation during use of the battery. During the recharging process, especially where a high charging rate is used, the solution evaporates more rapidly, and the caps should be removed so that this vapour can be diffused readily. In some instances the vapour, when mixed with air, would be inflammable, and if the cap is suddenly removed after charging, and an open flame happened to be nearby, an explosion might take place. For this reason a match should never be used to examine the level of the electrolyte, especially during or immediately after charge. A small flashlight should be used for this purpose. Thousands of 2500 firms in the United States are now manufacturing radio sets and parts.

A piece of adhesive tape wound about a valve so as to cover the junction between glass and base, will help to prevent vibration of the valve, and will also prevent the glass from becoming loose from the base. Only a single turn is necessary.

Radio, except for educational and experimental purposes, is banned in China, and cannot be legally imported. For these purposes a permit may be obtained from the Central Government. In addition to the fact that China owns and controls the means of telegraphic communication, the Ministry of War regards radio as munitions of war, and, therefore, its importation is prohibited. We must not forget, however, that war is going on in China.

The Danish Minister of Public Works recently opened the new broadcast station established by the Government near Kallundborg, in north-west Zealand, in which function he was assisted by the president of the Radio Council. The station has an input power of seven thousand watts.

- 8.10: Euphonium solo—Bandsman M. Bolt, "At Sunset" (Beyer).
8.15: Baritone solo—The Middle Fellow, "The Wee Hoose Among the Heather" (Lauder).
8.19: Suite—Wellington Artillery Band, "Bohemian Suite" (Hume), (1) "The Appeal"; (2) "The Caravan"; (3) "Tarantella."
8.28: Song at piano—Mr. Billy Hart, "Baby Feet Go Pitter Patter" (Kahn).
8.32: Cornet solo, with band accompaniment—"Distant Voices" (Rimmer).
8.37: Quiet interlude—Two Fellows, "Sincerity" (Somerset).
8.41: Descriptive fantasia—Wellington Artillery Band, "In Coon Land" (Biddgood).
8.50: Uproar—The Mellow Fellows, "A Musical Muddle" (Hopkirk).
8.55: Morceau—Wellington Artillery Band, "The Elephant's Trot" (Kahn).
9.0: Weather forecast.
9.1: Lecturette by representative of Birds' Protection Society, "Native Birds."
9.11: Waltz—Wellington Artillery Band, "Love's Messenger" (Beyer).
9.15: Bass attempt—The Low Fellow, "Stock Rider's Song" (James).
9.19: Humoresque—Wellington Artillery Band, "A Trip to Blackpool" (Raymond).
9.29: Tenor—The High Fellow, "Spring Time" (Tirindelli).
9.33: Song at the piano—Mr. Billy Hart, "High Up in the Hills" (Abrahams).
9.37: Intermezzo—Wellington Artillery Band, "The Gondolier" (Powell).
9.42: Yorkshire lament—The Unspeakable Fellow, "Eh! I'm Upset" (Foy).
9.50: Harmony—All the Fellows, "Plantation Lullaby" (Johns).
9.54: Two-step—Wellington Artillery Band, "Paddy's Outing" (Holiday).
10.0: God Save the King.

3YA CHRISTCHURCH (306 METRES)—THURSDAY, FEBRUARY 23.

- 3 p.m.: Afternoon session—Selected Studio items.
4.30: Close down.
6.0: Children's hour—Chuckie and Aunt Pat. Bedtime stories, songs, and birthday greetings.
7.15: News and reports.
8.0: Relay of orchestral music from Everybody's Picture Theatre Orchestra, under the conductorship of Mr. Albert Biddgood.
Grand opera concert by Madame Gower-Burns's Grand Operatic Quartet.
8.15: Soprano and tenor duet—Madame Gower-Burns and Mr. Harold Prescott, "By the Ashes of My Father" from "Lucia de Lammermoor" (Donizetti).
8.19: Contralto solo—Miss Jessie King, "Fair Spring Is Returning" from Samsen and Delilah" (Saint-Saens).
8.23: Pianoforte solos—Miss Bessie Pollard, A.T.C.L., L.T.C.L., (a) "Refrain de Berceuse" (Palmgren); (b) "Prelude No. 17" (Chopin).
8.30: Baritone solo—Mr. Bernard Rennell, "Prologue" from "I Pagliacci" (Leoncavallo).
8.34: Instrumental trio—Christchurch Broadcasting Trio, "Andante Tranquillo and Scherzo in D Minor" (Mendelssohn).
8.45: Recitative and air—Madame Gower-Burns, "Air de Lia—Azail" from "L'Enfant Prodigue."
8.49: Recital—Miss Maiona Juriss, A.T.C.L., "Portia's Discussion With Nerissa" from "Merchant of Venice" (Shakespeare).
8.53: Tenor solo—Mr. Harold Prescott, "Air Siciliana" from "Cavalleria Rusticana" (Mascagni).
8.58: Weather forecast.
9.0: Relay of orchestral selections from Everybody's Theatre.
9.15: Soprano and contralto duet—Madame Gower-Burns and Miss Jessie King, "Sainted Mother" from "Maritana" (Wallace).
9.19: Baritone solo—Mr. Bernard Rennell, "Song of the Flea" from "Faust" (Moussorgsky).
9.23: Pianoforte solo—Miss Bessie Pollard, A.T.C.L., L.T.C.L., "Rigoletto" (Verdi-Liszt).
9.28: Soprano solo—Madame Gower-Burns, "I Said, There is Nothing to Fear" from "Carmen" (Bizet).
9.32: Recitative—Mr. Harold Prescott, "Cavatina" from "Faust" (Gounod).
9.36: Instrumental trios—Christchurch Broadcasting Trio, (a) "March Habanera" from "Carmen" (Bizet); (b) "Flower Song" from "Carmen" (Bizet); (c) "Gavotte" from "Mignon" (Thomas).
9.46: Soprano and baritone duet—Madame Gower-Burns and Mr. Bernard Rennell, "Selvis at This Hour" from "Pagliacci" (Leoncavallo).
9.50: Contralto solo—Miss Jessie King, "Seguidilla" from "Carmen" (Bizet).
9.54: Vocal quartet—Madame Gower-Burns, Miss Jessie King, Messrs. Harold Prescott and Bernard Rennell, "Quartet from Rigoletto" (Verdi).
9.58: Recital—Miss Maiona Juriss, A.T.C.L., "Young Fellow My Lad" (Service).
God Save the King.

4YA DUNEDIN (463 METRES)—THURSDAY, FEBRUARY 23.

- 7 p.m.: Town Hall chimes.
7.1: Request gramophone recital.
7.30: News session.
8.0: Town Hall chimes.
8.1: Relay of orchestral music from Octagon Theatre. Conductor, Mr. L. D. Austen.
8.11: Soprano solos—Miss Agnes Guy, (a) "Break, Break, Break" (Carey). (b) "Thoughts Have Wings" (Lehmann).
8.18: Cello solo—Mr. Malcolm Robilliard, "Ave Maria" (Gounod).
8.23: Bass solo—Mr. F. C. Cooper, "The Poor Old Bo'sun" (Longstaffe).
8.27: Pianoforte solo—Miss Marjorie Watts, "Romance in D Flat."
8.32: Contralto solos—Miss Dorothy Skinner, (a) "The Arrow and the Song" (Balfé); (b) "My Treasure" (Trevalsa).
8.39: Relay of orchestral music from the Octagon Theatre.
8.50: Cello solo—Mr. Malcolm Robilliard, "Coronach" (Barratt).
8.55: Baritone solo—Mr. L. M. Cashemaille, "The Sun God" (James).
9.0: Town Hall chimes. Weather report and forecast.
9.2: Address—Pastor W. D. More.
9.17: Pianoforte solo—Miss Marjorie Watts, "Liebeslied" (Schumann-Liszt).
9.22: Soprano solo—Miss Agnes Guy, "Sweet and Low" (Johnston).
9.25: Relay of orchestral music from the Octagon Theatre.
9.35: Bass solos—Mr. F. C. Cooper, (a) "The Watchers of the Crag" (Johnston); (b) "When Bright Eyes Glance" (Hedgecock).
9.41: Cello solo—Mr. Malcolm Robilliard, "Minuet No. 2" (Mozart).
9.45: Contralto solo—Miss Dorothy Skinner, "The Unforeseen" (Scott).
9.48: Pianoforte solo—Miss Marjorie Watts, "Valse No. 10" (Chopin).
9.52: Baritone solos—Mr. L. M. Cashemaille, (a) "Brian of Glenear" (Graham); (b) "When the King Went Forth to War" (Koene-man).
10.0: God Save the King.

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AUCKLAND

Friday, February 24th

1YA AUCKLAND (333 METRES)—FRIDAY, FEBRUARY 24.

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: Literary selection by the Announcer.
4.30: Close down.
6.0: Children's hour, conducted by Nod.
7.15: Talk on "Motoring," by Mr. Geo. Campbell.
7.30: News and reports.
8.0: Chimes.
8.1: Relay of orchestral overture, from Rialto Theatre. Conductor, Henry C. Engel.
8.10: Vocal duet—Miss Alma McGruer and Miss Beryl Smith, "My Thoughts Are Swallows" (Lambert).
8.14: Cornet solo—Mr. Eustace Tregilgas, "Diploma Polka" (Cox).
8.19: Vocal and piano—Mr. Clyde Howley, (a) "Waiting for Ships that Never Come In"; (b) "Jazz Waltz Medley."
8.26: Contralto solo—Miss Beryl Smith, "Hills of Donegal" (Anderson).
8.30: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Trio, Op. 25—Allegro and Andante (Bach).
8.39: Recital—Mr. J. F. Montague, "Thanatopsis—A View of Death" (Bryant).
8.44: Vocal and instrumental trio—The Bohemian Trio, (a) "Popular Hawaiian Melodies"; (b) "Popular Maori Melodies."
8.51: Cornet solo—Mr. E. Tregilgas, "Les than the Dust" (Finden).
8.56: Soprano solos—Miss Alma McGruer, (a) "Pipes of Pan" (Monckton); (b) "Love's a Merchant" (Carver).
9.3: Weather forecast.
9.5: Relay of orchestral interlude from Rialto Theatre.
9.10: Vocal and piano—Mr. Clyde Howley, (a) "Broken-hearted"; (b) "Fox-trot Medley."
9.17: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Spanish Dances" (Moszkowski).
9.24: Vocal duets—Miss McGruer and Miss Smith, (a) "Just awayin' for You" (Bond); (b) "When Song is Sweet" (Sans Souci).
9.33: Recitals—Mr. J. F. Montague, (a) "A Group of Short Poems"; (b) "The House by the Side of the Road."
9.40: Contralto solo—Miss Beryl Smith, selected.
9.44: Cornet solo—Mr. E. Tregilgas, "The Holy City" (Adams).
9.48: Violin and piano—Miss Ina Bosworth and Mr. Cyril Towsey, "Sonata in F Major—Allegro Con Brio" (Grieg).
9.57: Vocal trio—The Bohemian Trio, latest selections.
10.4: A thought.
10.6: God Save the King.

2YA WELLINGTON (420 METRES)—FRIDAY, FEBRUARY 24.

- 2.30: Relay description of Anthony Wilding Shield tennis match, Wellington v. Canterbury.
Interspersed with selected gramophone items, and lecturette by Miss Marion Christian, of the Wellington Gas Company, on "Gas Cooking."
6.0: Children's hour—Uncle Ernest. Gramophone items, stories, and birthday greetings. Piano duet and solos by Cousin Yvonne and partner. Humorous sketches by Cousin Vernon. Jokes, dialogue, and fun.
7.0: News, information, and market reports.
8.0: Chimes of the General Post Office clock, Wellington.
8.1: Overture—"La Boheme" (Puccini).
8.5: Vocal quartet—Celeste Quartet, "A Fox Hunt" (Wheeler).
8.9: Humour—Mr. Cedric Gardiner, "The Paddy Room" (Thomas).
8.14: Bass solo—Mr. William Boardman, "The Vagabond" (Molloy).
8.18: Instrumental trio—Symons-Ellwood-Short Trio, "Theme and Variations" (Tchaikowsky).
8.28: Vocal duet—Miss Mabel Dyer and Mr. Edgar Swain, "Venetian Song" (Tosti).
8.32: Italian mandolin—Mr. Lad Haywood, "At Sundown" (Donaldson).
8.37: Musical novelty—The Two Boiled Owls, "The Disorderly Room."
8.45: Soprano solo—Miss Myra Sawyer, "The Nightingale and the Rose" (Thomson).
8.50: Pianoforte solo—Mr. Gordon Short, "Reflections in the Water" (Debussy).
8.56: Tenor solos—Mr. Edgar Swain, (a) "Fuchsia Tree" (Quilter); (b) "Little Green Lady of Mine" (Torrens).
9.4: Lecturette—Editor-Announcer, "Imperial Affairs."
9.19: Instrumental trio—Symons-Ellwood-Short Trio, "Scherzo and Finale from B Flat Trio" (Schubert).
9.29: Humour—Mr. Cedric Gardiner, "The Yard Dog" (Thomas).
9.33: Vocal duet—Miss Myra Sawyer and Mr. William Boardman, "Still as the Night" (Goetz).
9.37: Italian mandolin—Mr. Lad Haywood, "Charmine" (Pollock).
9.41: Contralto solo—Miss Mable Dyer, "A Request" (Finden).
9.45: Novelty—The Two Boiled Owls, "The Radio Fan's Dream."
9.55: Humorous quartet—The Celeste Quartet, "Good Advice" (Colville).
10.0: God Save the King.

3YA CHRISTCHURCH (306 METRES)—FRIDAY, FEBRUARY 24.

- 3 p.m.: Afternoon concert—Selected Studio items.
4.30: Close down.
6.0: Children's hour—Big Brother and Aunt Pat. Bedtime stories and birthday greetings.
7.15: News and reports.
8.0: Chimes. Relay of orchestral music from Crystal Palace Theatre Orchestra, under the direction of Mr. A. J. Bunz.
8.15: Vocal quartet—The Melodious Four, "Welcome to May" (Mendelssohn).
8.19: Violin solo—Miss Irene Morris, "Serenade" (Barns).
8.24: Tenor solo—Mr. Russell Sumner, "Carita" (Mattei).
8.28: Recitals—Miss Naare Hooper, L.T.C.L., (a) selection from "Peg o' My Heart" (Manners); (b) "Cargoes" (Masefield).
8.35: Contralto solo—Miss Belle Renaut, "Slumber Song of the Madonna" (Head).
8.40: Instrumental trio—Christchurch Broadcasting Trio, "Finale—Allegro Appassionata" from "D Minor Trio" (Mendelssohn).
8.50: Soprano solos—Miss Frances Hamerton, (a) "The New Umbrella" (Besley); (b) "Listening" (Besley).
8.55: Baritone solo—Mr. T. D. Williams, "Route Marching" (Chadwick).
8.59: Weather report.
9.0: Saxophone solos—Mr. Lyndon Christie, (a) "Chanson Indoue" (Kreisler); (b) "O Sole Mio" (Di Capua).
9.6: Tenor solo—Mr. Russell Sumner, "Now Sleeps the Crimson Petal" (Quilter).
9.9: Violin solo—Miss Irene Morris, "Midnight Bells" (Kreisler).
9.14: Contralto solo—Miss Belle Renaut, "Damon" (Stange).
9.19: Instrumental trio—Christchurch Broadcasting Trio, (a) "Andante Melodique" (Dancja); (b) "Gavotte" (Sinding).
9.28: Soprano solo—Miss Frances Hamerton, "Sanctuary" (Besley).
9.31: Saxophone solos—Mr. Lyndon Christie, (a) "Souvenir" (Drdla); (b) "Me and My Shadow" (Jolson).
9.36: Baritone solo—Mr. T. D. Williams, "Because of You" (Tosti).
9.40: Humorous recital—Miss Naare Hooper, L.T.C.L., "Water" (by our Office Boy).
9.45: Tenor and baritone duet—Messrs. Russell Sumner and T. D. Williams, "The Battle Eve" (Bonheur).
9.50: Vocal quartets—The Melodious Four, (a) "Sleep, Gentle Lady"; (b) selected.
God Save the King.

4YA DUNEDIN (463 METRES)—FRIDAY, FEBRUARY 24.

- 3 p.m.: Town Hall chimes.
3.1: His Master's Voice recital.
3.15: Afternoon tea music, relayed from the Savoy.
3.30: Fashion talk by a representative of the D.S.A.
3.45: Studio music.
4.0: Music from the Savoy.
4.15: His Master's Voice recital.
4.30: Close down.
6.0: Town Hall chimes.
6.1: Children's hour—Big Brother Bill and some cousins.
7.15: News session.
7.30: Book review, by Mr. H. Greenwood, librarian of the Dunedin Athenaeum.
8.0: Town Hall chimes.
8.1: Bass solo—Mr. Neil Black, "The Mountains of Mourne" (Collisson).
8.6: Pianoforte solo—Mr. Gordon Findlay, "Pas de Charges" (Mattei).

Programmes Continued

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- 8.11: Contralto solos—Miss Flora Williamson, (a) "Rest at Midday" (Hamilton); (b) "Four by the Clock" (Mannison).
8.17: Hawaiian guitar duo—Messrs. Sheehy and Campbell, "When it's Love-time in Hawaii" (Heatney).
8.20: Baritone solo—Mr. Bert Rawlinson, "Drake's Drum" (Lennard).
8.25: Pianoforte solo—Mr. Gordon Findlay, "Ballade No. 1, Op. 10, Andante in D Minor" (Brahms).
8.30: Soprano solos—Mrs. D. Carty, (a) "Eileen Alannah"; (b) "Flight of Ages" (Bevan).
8.36: Guitar duo—Messrs. Sheehy and Campbell, "Coral Sands of My Hawaii" (Heatney).
8.39: Bass solos—Mr. Neil Black, (a) "My Old Shako" (Trotter); (b) "Two Eyes of Grey" (McGeogh).
8.46: Pianoforte solo—Mr. Gordon Findlay, "March a La Turque" (Beethoven).
8.49: Contralto solo—Miss Flora Williamson, "Friend o' Mine" (Sanderson).
8.53: Baritone solos—Mr. Bert Rawlinson, (a) "The Floral Dance" (Moss); (b) "The Wolf" (Shields).
9.0: Guitar duo—Messrs. Sheehy and Campbell, "Lay My Head Beneath a Rose".
9.6: Soprano solo—Mrs. D. Carty, "The Song that Reached my Heart" (Gordon).
9.11: Weather report and forecast.
9.12: Relay of dance music from the Savoy.
10.0: Close down.

Saturday, February 25th

1YA AUCKLAND (333 METRES)—SATURDAY, FEBRUARY 25.

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: Literary selection by the Announcer.
4.30: Close down.
6.0: Children's hour, conducted by Cinderella.
7.15: Talk on "Motoring," by Mr. Geo. Campbell.
7.30: News and reports.
8.0: Chimes.
8.1: Relay of orchestral overture from Strand Theatre—Eve Bentley conducting.
8.16: Vocal quartet—The Lyric Four, "The Jolly Roger" (Lewis).
8.20: Tenor solo—Mr. Herbert Richards, "A Border Ballad" (Cowen).
8.24: Humour—Mr. Allan McElwain, "Setting a Hen."
8.29: Vocal quartet—The Lyric Four, "The Pilgrims' Chorus" from "Tannhauser" (Wagner).
8.34: Relay of orchestral interlude from Strand Theatre.
8.49: Bass solo—Mr. Ernest Thomas, "The Sword of Ferrara" (Bullard).
8.53: Humour—Mr. Allan McElwain, "The Vicar's Presentation" (Kershaw).
8.58: Tenor solo—Mr. Arthur Ripley, "Oft in the Stilly Night" (Moore).
9.3: Vocal quartet—The Lyric Four, "Night Winds Gently Flow" (Calkin).
9.7: Weather forecast.
9.9: Relay of dance music from Dixieland Cabaret by The Internationals, under Mr. Clyde Howley.
11.0: A thought.
11.2: God Save the King.

2YA WELLINGTON (420 METRES)—SATURDAY, FEBRUARY 25.

- 3 p.m.: Chimes of the General Post Office clock, Wellington.
3.1: Selected gramophone items.
5.0: Close down.
6.0: Children's hour—Aunts Gwen and Dot. Gramophone selection, march, Birthday greetings. Piano duets and solos and Phyllis and Ruby, "Country Dance" (Quilter). Miss Phyllis Bates, stories and entertainment for the Children. Piano solo, Cousin Phyllis, "The Question" (Elkin). Piano duet, Phyllis and Ruby, "Second Marche Militaire" (Schubert).
7.0: News session, market reports, and sports results.
8.0: Chimes of the General Post Office clock, Wellington.
8.1: Overture—"The Skaters' Waltz" (Waldteufel).
8.4: Vocal quartet—Melodie Four, "They Kissed" (Molloy).
8.8: Hawaiian trio—E. J. Palmer's Hawaiian Trio, "Palakiko Blues."
8.14: Tenor solos—Mr. Frank Bryant, (a) "I Don't Suppose" (Trotter); (b) "Who Knows?" (Ball).
8.20: Instrumental trio—Symons-Ellwood-Short Trio, "Trio in G Major, First Movement" (Reissiger).
8.30: Vocal quartet—Melodie Four, "Lay My Head Beneath a Rose" (Falkenstein).
8.34: Hawaiian trio—E. J. Palmer's Hawaiian Trio, "Hilo March."
8.40: Tenor solo—Mr. Sam. Duncan, "Oft in the Stilly Night" (traditional Irish air).
8.45: Baritone solo—Mr. R. S. Allwright, "Mother o' Mine" (Tours).
8.50: Cello and pianoforte duo—Messrs. George Ellwood and Gordon Short, "Andante" from "Cello Sonata" (Grieg).
8.58: Vocal quartet—Melodie Four, "Drifting and Dreaming" (Van Alstyne).
9.2: Weather forecast.
9.3: Relay of Chas. Dalton's Columbian Solo Six Orchestra from the Columbian Cabaret, Kilmorie.
11.0: Close down.

3YA CHRISTCHURCH (306 METRES)—SATURDAY, FEBRUARY 25.

- 6 p.m.: Children's hour—Uncle Sam and Aunt May. Bedtime stories and birthday greetings.
7.15: News and reports.
7.30: Sports results.
8.0: Chimes. Relay of orchestral selections from Liberty Picture Theatre Orchestra, under the conductorship of Mr. Ernest Jamieson.
8.15: Soprano and tenor duo—Miss Mabel Thomas and Mr. David McGill, selected.
8.19: Banjo Band—Beresford Banjo Band, "Minstrel Melodies, Part I" (Dare).
8.24: Songs at the piano—Mr. E. A. Sargent, (a) "Spring, Spring, Glorious Spring" (Gill); (b) "And the World Went Very Well Then" (Spurr).
8.29: Banjo Band—Beresford Banjo Band, "Fun and Frolic" (Kennedy).
8.34: Soprano solo—Miss Mabel Thomas, Jewel Song from "Faust" (Gounod).
8.38: Instrumental trio—Christchurch Broadcasting Trio, "Finale from Trio in C Minor" (Mendelssohn).
8.50: Humorous talk—Mr. Sydney Comfort, "Sydney Speaks to Himself."
8.55: Tenor solo—Mr. David McGill, "Doloroso" (Phillips).
8.59: Weather forecast.
9.0: Relay of orchestral selections from Liberty Theatre.
9.15: Banjo Band—Beresford Banjo Band, "What Good is Good Morning?" (Santley).
9.20: Songs at piano—Mr. E. A. Sargent, (a) "Bahrem Bem Borem" (Kirby); (b) "Two Little Irish Songs."
9.25: Instrumental trio—Christchurch Broadcasting Trio, (a) "To a Fairy Boat" (Hope); (b) "Scherzo from Trio in E Flat" (Reissiger).
9.36: Soprano and tenor duo—Miss Mabel Thomas and Mr. David McGill, selected.
9.39: Banjo Band—Beresford Banjo Band, "Minstrel Melodies, Part II" (Dare).
9.44: Soprano solo—Miss Mabel Thomas, "I Passed by Your Window" (Brahe).
9.47: Instrumental trio—Christchurch Broadcasting Trio, (a) "Reverie" (Ganne); (b) "Gypsy Song" (Bizet).
9.54: Humorous talk—Mr. Sydney Comfort, "Sydney Once Again Speaks to Himself."
9.57: Banjo Band—Beresford Banjo Band, "Merry-Go-Round" (Folkestone).
10.2: Tenor solo—Mr. David McGill, "Heart of Gold" (Manney).
10.6: Banjo Band—Beresford Banjo Band, "Bonnie Scotland" (Kennedy).
10.11: Dance music until 11 p.m.
God Save the King.

4YA DUNEDIN (463 METRES)—SATURDAY, FEBRUARY 25.

- 7.15 p.m.: News session.
7.30: Address on "Interior Decoration," by Miss Marguerite Puechegud.
8.0: Town Hall chimes.
8.1: Relay of orchestral music from the Empire Theatre, under Mr. Chas. Parnell.
8.11: Mezzo-soprano solos—Miss Mollie Vickers, (a) "The Harvest of Sorrow" (Rachmaninoff); (b) "He Shall Feed His Flock" from "The Messiah" (Handel).
8.18: Cornet solo—Mr. D. J. Robertson, "Il Bacio" (Arditi).
8.23: Tenor solo—Mr. Dan Fogarty, "Oft in the Stilly Night" (Moore).

- 8.27: Violin solo—Miss Eva Judd, "Gavotte in E" (Bach-Kreisler).
8.32: Soprano solo—Miss Edith Morrison, "Waltz Song" from "Tom Jones" (German).
8.37: Pianoforte solo—Miss Muriel Caddie, "Ballad No. 1" (Brahms).
8.41: Humorous song—Mr. Percy James, "Fellow Travellers" (Wells).
8.47: Orchestral relay from the Empire Theatre.
8.57: Mezzo-soprano solo—Miss Mollie Vickers, "The Dawn" (Loewe).
9.0: Pianoforte solos—Miss Muriel Caddie, (a) "Sonata in A" (Scarlatti); (b) "Romanza" (Schumann).
9.3: Cornet solo—Mr. D. J. Robertson, "Break of Day" (Hume).
9.10: Tenor solos—Mr. Dan Fogarty, (a) "A Red Rosebud" (Gibbs); (b) "Believe Me If All Those Endearing Young Charms" (Moore).
9.17: Violin solo—Miss Eva Judd, "Ballet Music" from "Rosamond" (Schubert-Kreisler).
9.22: Soprano solos—Miss Edith Morrison, (a) "On the Banks of Allan Water"; (b) "I've Been Roaming" (Horn).
9.28: Pianoforte solo—Miss Muriel Caddie, "The Lark" (Glinka).
9.32: Cornet solo—Mr. D. J. Robertson, "Largo" (Handel).
9.38: Light vocal solos—Mr. Percy James, (a) "Kind Regards" (Barrett); (b) "Prodigal Daughter" (Kent).
9.46: Violin solo—Miss Eva Judd, "Cavatina" (Bohm).
9.52: Orchestral music from the Empire Theatre.
10.0: Close down.

Sunday, February 26th

1YA AUCKLAND (333 METRES)—SUNDAY, FEBRUARY 26.

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: Literary selection by the Announcer.
4.30: Close down.
6.0: Children's service, conducted by Uncle Leo.
6.55: Relay of evening service from Baptist Tabernacle. Preacher, Rev. J. Kemp; organist and musical director, Mr. Arthur E. Wilson.
Special Studio Concert.
8.30: Vocal quartet—St. Andrew's Quartet, "Holiest, Breathe" (Old Italian).
8.34: Contralto solo—Miss Phyllis Gribben, "The Lord Is My Light" (Allitson).
8.39: Instrumental trio—Bosworth-Hemus-Towsey Trio, "Trio, Op. 25—Finale" (Bache).
8.49: Bass solo—Mr. Arthur Colledge, "Within These Sacred Portals" (Mozart).
8.53: Vocal quartet—St. Andrew's Quartet, "Quando Corpus" (Rossini).
8.57: Tenor solo—Mr. Robert Peter, "The Soft Southern Breeze" (Barnby).
9.1: Violin and piano duo—Miss Ina Bosworth and Mr. Cyril Towsey, "Sonata for Violin and Piano in F Major—Allegro and Finale" (Grieg).
9.11: Vocal quartet—St. Andrew's Quartet, "I Will Lay Me Down in Peace" (Galsby).
9.15: A thought.
9.17: Close down.

2YA WELLINGTON (420 METRES)—SUNDAY, FEBRUARY 26.

- 6 p.m.: Children's service, conducted by Uncle Ernest.
6.55: Relay of evening service from Taranaki Street Methodist Church. Preacher, Rev. Clarence Eaton; organist and choral director, Mr. H. Temple White.
8.30: Mezzo-contralto solo—Miss N. Coster, "Like to the Damask Rose" (Elgar).
8.35: Vocal quartet—Ariel Singers, (a) "The Ash Grove" (Welsh air, arr. by Crampton); (b) "Sleep, Gentle Lady" (Bishop).
8.43: Instrumental quartet—Symons-Ellwood String Quartet, "Andante Cantabile" from "D Major Quartet" (Tschikowsky).
8.48: Tenor solo—Mr. Roy Hill, "Praise Ye the Lord" (Bantock).
8.52: Vocal duo—Miss N. Coster and M. J. M. Caldwell, "Love Divine" from "The Daughter of Jairus" (Stainer).
8.57: Vocal quartet—Symons-Ellwood String Quartet, (a) "First Movement from G Major Quartet" (Mozart); (b) "Minnetto" (Bocherini).
9.3: Soprano solo—Miss Jeanette Briggs, "The Willow" (Goring Thomas).
9.8: Vocal quartet—Ariel Singers, "The Winds" (Cymson).
9.14: Cello solo—Mr. Geo. Ellwood, "Air with String Accompaniment" (Bach).
9.20: Tenor solo—Mr. Roy Hill, selected.
9.25: Bass solo—Mr. J. M. Caldwell, "The Windmill" (Nelson).

3YA CHRISTCHURCH (306 METRES)—SUNDAY, FEBRUARY 26.

- 5.45 p.m.: Children's song service, conducted by Uncle Sam, assisted by the East Belt Methodist Sunday School.
7.0: Relay of evening service from St. Andrew's Presbyterian Church. Anthems, (a) "I Was Glad When They Said Unto Me" (Elvy); (b) "The Sun Shall Be No More" (Woodward). Preacher, Rev. N. L. D. Webster; organist, Mr. R. E. Lake; choirmaster, Mr. J. McLean.
After the church service, the following concert will be given from 3YA Studio:—
8.15: Baritone solo—Mr. Francis Jones, "Thou Art Passing Hence, My Brother" (Sullivan).
Soprano solos—Mrs. Frank O'Brien, (a) "At Dawning" (Cadman); (b) "Light Has Sent Me Many Roses" (Lohr).
Clarinet solo—Mr. M. E. Withers, "Scena ed Aria" (Bergson).
Contralto solo—Miss Nancy Bowden, "O, Rest in the Lord" from "Elijah" (Mendelssohn).
Baritone solos—Mr. Francis Jones, (a) "Nazareth" (Gounod); (b) "A Song of Sleep" (Somerset).
Soprano solo—Mrs. Frank O'Brien, "Rumanian Night Song" (Lohr).
Clarinet solo—Mr. M. E. Withers, "Ave Maria" (Schubert).
Contralto solo—Miss Nancy Bowden, "Creation's Hymn" (Beethoven).
God Save the King.

4YA DUNEDIN (463 METRES)—SUNDAY, FEBRUARY 26.

- 5.45 p.m.: Children's song service, conducted by Big Brother Bill.
7.0: Relay of evening service from Knox Church. Preacher, Rev. Tulloch Yuille, B.D., M.A.; organist, Mr. W. Paget Gale.
8.15: Studio concert.
9.15: Close down.

If sulphuric acid from an accumulator is spilled on a floor or a carpet, it will rapidly "eat it away," unless the sulphuric acid is neutralised. This can be done by ammonia, or ordinary washing soda, or even bicarbonate of soda, if applied freely, and at the fullest possible strength.

Did you know that when a set slowly builds up an oscillation (or howl), the trouble is generally due to the fact that the loudspeaker is too close to the set, or is pointing directly towards it?

In home-made wet "D" batteries (high tension accumulators), it is necessary to insulate each cell from its neighbour, otherwise, instead of voltage, you will get trouble.

When a wire is joined to one side of each of two condensers, and another wire to the other sides of both, they are said to be in parallel, and their capacity as a total will be the sum of the separate capacities. For instance, a .0002 mfd. and a .0003 mfd. condenser connected in parallel would give a total capacity of .0005 mfd.

It is generally the obvious troubles, such as the use of a piece of broken flex, or a valve, which is making faulty contact with its valve holder, that get overlooked longest. Always attend to the obvious first, after which the various conditions of the parts can be attended to.

A New South Wales listener writes to the Melbourne "Listener-In": "I have noticed that 2FC and 3AR are practically free from static, and when I tune down to 2BL, static is much more intense, and practically blots all the lower wave-length stations out. 2GB and 5DN seem to be practically on the one wave-length, but on a night fairly free from static 2GB comes in very plainly, with just a slight heterodyne whistle. 2FC is received here very plainly, but fades occasionally. 4QG used to be very good, but now comes in very distorted, like 7ZL. My set is a 5-valve Brownie Drake."

The old broadcasting station at Soro, Denmark, has been closed, and its place has been taken by a new and improved one at Kallundborg. The new station relays the Copenhagen service on the same wave-length that Soro used, but uses a power of seven kilowatts, as compared with only one kilowatt at Kallundborg.

A good rough-and-ready test for oscillation is to wet the finger and touch the aerial terminal with it. If a loud "click" is heard every time the finger both touches and leaves the aerial terminal, you can be certain the set is oscillating and causing interference with other listeners.

When working on the short waves the aerial coil should be coupled loosely, or the set will refuse to oscillate.

The call sign of the Siberian short-wave broadcast station is R.F.M. This station was installed by Carl Madsen (N.U.9.BHO), of the Westinghouse Electric and Manufacturing Co. of America. The power used is 20,000 watts, and the working wavelength 60 metres, but there is also a very powerful harmonic or a dual wavelength on 30 metres. The installation is crystal controlled and the modulation is remarkably good. The location of this station is Khabarovsk, Siberia, U.S.S.R. (United States of Soviet Russia). This station works nightly between 10.30 p.m. and midnight, and transmits some very good music, both orchestral and vocal.

The capacity of the average 100-foot broadcast listener's aerial is in the neighbourhood of .0002 or .0003 mfd.

Liege (Belgium) is already arranging for its second International Broadcasting Exhibition, which will be held in the Palace of Arts from March 10 to March 25 this year, and is expected to comprise representatives of all important countries of the world.

Always place your accumulators on an old magazine or a piece of wood, as there is a lot of loose acid about at a charging station, and, however carefully the cells are roped, there is a possibility that a very fine film of acid may be left. Sulphuric acid is extremely corrosive, and it does not take much of it to run a carpet or damage the inside of a radio-set cabinet.

By abolishing the usual grid leak and condenser in favour of an audio transformer, whose secondary is connected in series with the grid leak and the .0005 condenser, which is placed across the A.T. coil, clarity of pronunciation will be improved greatly. This is a new idea which now appears in a number of American circuits.

The Sydney Trades Hall broadcast station, 2KY, will shortly be building new studios in some central place in the city, announces Mr. Beaver, manager of that station. Present arrangements are unsuitable, and it is hoped to have completed the arrangements shortly. Their present studios are situated in the Trades Hall, in Goodburn Street, Sydney.

Signals which have passed around the world in the reverse direction from transmitter to receiver, or have passed more than once completely around the world, are known as radio echoes, because they make themselves manifest in the receiver as echoes make themselves manifest in acoustic phenomena. Echo signals not only have intense scientific interest, but with the advent of more and more stations in the very high frequency bands, have become of very great practical importance, because of their disastrous effects upon reception at certain times. It is amazing that those echo signals which have been photographically recorded, after having passed approximately two and one-half times around the world, are of sufficient intensity to cause very serious interference.

The presence of the grid leak makes no difference to the voltage applied to the grid provided that the valve is properly biased, for it is not until current flows that a resistance in series will cause an apparent voltage drop, and as no current should be allowed to flow between the filament and grid of the last valve, there is no loss of voltage in the circuit.

The broadcast of a Punch and Judy show in London recently met with great success. The average listener probably knows nothing of the history of this famous character who actually lived. He was a hunch-backed Italian actor, whose performances became so famous that the puppet-show for which Italy is so famous, imitated and perpetuated him in the show which still makes the whole world laugh.

Next Christmas should prove interesting if certain proposals by the B.C.C. eventuate. It is suggested that an Empire Christmas party be broadcast from London, and the following well-known personalities have approved of the idea—so we hope to hear more later:—Mr. Ramsay MacDonald, P.C., M.P.; Lord Danesfort, president of the British Empire Union; Sir Godfrey Langden, K.C.M.G., K.B.E., vice-president Royal Colonial Institute, and of the African Society; H.H. The Maharajah of Rajppla; Miss Pauline Frederick; the Right Hon. J. H. Thomas, M.P.; Colonel Harry Day, M.P.

Now that PCJJ has been dismantled and re-erected at Milverton, a brief review of its work may not be amiss, for it has certainly made radio history. It began by working on 30.2 metres when Australia spoke very well of its signals. Then on May 29, 1927, it had the audacity to relay Daventry, its signals being well received in Australia, New Zealand, India, and South Africa.

Dr. A. Hoyt Taylor, superintendent of radio at the Bellevue Naval Research Laboratories, U.S.A., defines the quartz crystal as a plank in the League of Nations—capable of avoiding international disputes by reason of its preciseness in controlling the assigned wavelengths of transmitting stations the world over. The Bureau of Standards rates this mineral more valuable than diamonds and gold—it being so relatively rare and precious as to precipitate a struggle between certain contending forces the triumph of either faction meaning a monopoly of this matter key to successful, interference-free radio broadcasting.

Mainly about Construction

BY "MEGOHM"

MAKING SPIDER-WEB TUNING COILS

HANDY AND COMPACT FOR CRYSTAL RECEPTION

THIS is a simple method of making tuning-coils having a similar effect to the honeycomb type. Owing to the style of construction, this type of coil is most suited to turns numbering not more than a hundred. However, this is no hardship, as one hundred turns have a minimum wavelength of over 800 metres—much above the broadcast level, and the coils most required have not more than 50 or 60 turns.

MAKING THE COILS.

A support for the wire has to be provided, and this may be either motor-hood celluloid, or hard, thin card, such as Bristol board. The former is first cut to shape by marking out a circle of suitable diameter for the number of turns to be put on the coil, 26's s.w.g. wire being a suitable gauge. If there is any doubt about size, make the circle oversize, as it can easily be trimmed down afterwards. Fifty turns of 26's enamelled wire occupy one inch, and 75 turns one and a half inches, so sizes may easily be reckoned. Now the making of a fifty-turn coil will be described as an example.

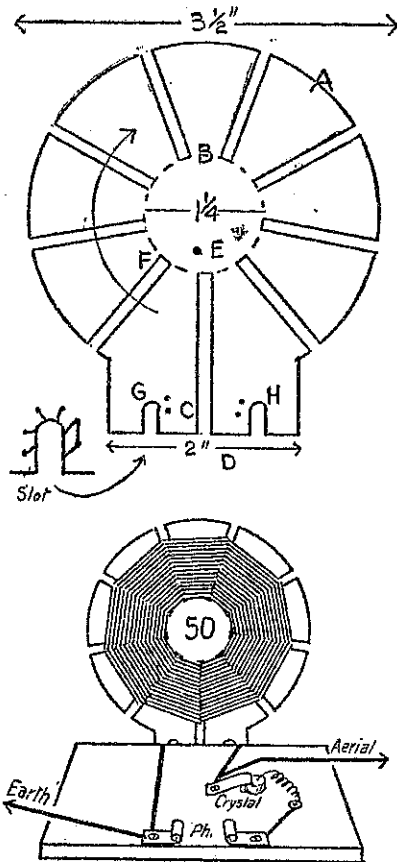
With a pair of dividers or compasses, radius 1 1/2 in., describe a circle A, 3 1/2 in. diameter. Then with radius 5/8 in., describe the circle B. Now mark off the square portion, from circle to edge, C, 1/2 in., and length D, 2 in. Now the two slots G, H, are cut, their centres being 1 1/8 in. apart, 3/8 in. deep, and just over 1/8 in. wide. Nine slots are to be cut as shown, equally spaced, each 1/8 in. wide. Note that the slot at C is to be marked first, and others will come in the right positions. It is an essential feature that there should be an odd number of slots.

Winding is commenced by piercing a hole at E, passing four inches of wire through, then proceeding to slot F, passing the wire through that, under the former, up through the next slot, down through the next, in the direction of the arrow, always pushing the wires towards the centre. This winding is continued until the requisite number of turns has been wound. It will be seen that the odd number of slots causes the turns to come on opposite sides of the former, automatically spacing them out. Counting across the turns on one side of the coil gives half the total number of turns actually wound.

The end of the wire is cut off with a few inches to spare, and is passed down through one of the holes at H and up through the other, then threaded in and out a few times through holes in the edge of the slot, then cut off close and the enamel taken off with glass-paper round the slot H. The beginning of the wire is then finished off in the same way. Such a coil may then be secured under two washers held by two screws the correct distance apart.

WAVELENGTH OF COILS.

The approximate number of turns for a given wavelength is given to enable constructors to provide a suitable number of turns for the station they wish to receive. For fine tuning it is necessary either to connect a variable condenser across the coil or to have two coils so that their distance can be varied to "tune-in" the station. A 40-and-30-turn makes a good combination, but depends to



some extent upon the wavelengths to be received. These wavelengths only refer to 26's wire on a former as specified.

20 turns.....	185 metres
30 turns.....	250 metres
40 turns.....	330 metres
50 turns.....	405 metres
60 turns.....	490 metres
70 turns.....	580 metres

By adding a few turns to the above in order to get above the wavelength required, it is possible to either twist taps into the last few turns of the coil, or tune-in and take turns off until maximum signals are obtained, and thus have a coil that tunes in the nearby local station without the use of a condenser or other tuning arrangement. This constitutes a very simple method of crystal reception, and might be fixed up as shown be-

low. A piece of board 5 by 3 inches will hold the complete outfit. The coil is secured by washers and screws into the back edge of the board, the two connecting wires being also held under the washers. The crystal is clamped by its edge under a slip of 18's brass sheet secured by a screw into the wood, the connecting wire being trapped underneath, and continued to the aerial. The other side of the coil connect to the 'phone clip and then to earth. The 'Phone clips are made of thin brass curled up as shown and held by a small brass screw.

About 50 to 54 turns brings in 2YA at short range of a few miles without any critical tuning, but at a distance careful tuning becomes necessary, and a tuning condenser essential. Even then if the number of turns on the coil is almost correct, but just below the wavelength of the desired station a vernier condenser of only two or three plates would accomplish the exact tuning.

FACTS ABOUT TUNING COILS

Whilst on the subject a few hints affecting the construction of coils generally will be of interest. A coil, whether spider, solenoid, or honeycomb, has a wavelength of its own, without any tuning arrangement entering in to the question. A condenser connected in "parallel" across the two ends of the coil increases the wavelength, but a condenser connected in "series," with one end to the coil and the other end to aerial or earth, reduces the wavelength of the coil to an amount depending upon the capacity of the condenser. If this condenser is variable, then we have a means of altering the wavelength of the coil to any wavelength within a certain range. If a condenser is connected to a coil in "parallel," we cannot tune to a wavelength below that of the coil alone, and in fact with the condenser set at minimum, there would be a slight extra capacity added to that of the coil, so that the minimum wavelength tunable would be slightly in excess of the coil alone. Now it will be seen that if we wish to tune over a certain range of metres with a coil and variable condenser, the natural wavelength of the coil must be a few metres below the minimum wavelength required, and the condenser must be of sufficient capacity to enable the combined effect to reach the maximum wavelength desired.

If tuning is to be accomplished with a slider, then the coil must have a wavelength slightly in excess of the required maximum, and lower wavelengths are then tuned in by tapping a reduced number of turns with the slider.

In deciding the details of construction for a coil, the chief factors governing the wavelength are:

1. Diameter of coil.
2. Gauge of wire.
3. Number of turns.
4. Amount of space between turns.

Increasing the diameter of the coil, keeping the same number of turns, increases the wavelength, so that we can increase the diameter and reduce the number of turns to keep the same wavelength. Reducing the diameter lowers the wavelength, so adding turns would keep it the same. Increasing the diameter does not effect a proportional increase in wavelength. Doubling the diameter of a 50-turn, 2-inch coil with a maximum wavelength of 315 metres would only increase the wavelength to 505 metres.

The gauge of wire being reduced, increases the wavelength. If a 3 in. solenoid is wound with 50 turns of 20's wire its wavelength will be 365 metres, whilst if the gauge of wire is reduced to 22's it will be 390, 24's 410, 26's 435, 28's 450, 30's 470 metres.

The increase of the number of turns increases wavelength. A 3 in. solenoid wound with 20 turns of 24's wire has a maximum wavelength of 215 metres, and if the turns are increased to 40, the wavelength is 355 metres; to 80 turns, 575 metres.

Spacing the turns slightly apart instead of winding each one close to the preceding one, is known as "low-loss" winding. This spacing reduces loss by causing the radio-frequency currents to traverse the whole length of the coil instead of allowing an appreciable amount of the energy to take a short cut by skipping from turn to turn across the short path between closely-wound turns. Spacing turns slightly reduces wavelength but only a few extra turns are required to compensate for this. Spacing makes tuning more selective, that is, makes it less easy for a station to spread over a large number of degrees on the dial.

Neutralisation of the Browning-Drake circuit is a variable factor dependent upon the self-capacity of the R.F. side of each particular receiver. The set constructed by the writer neutralises with the small capacity condenser described in the article, and sets of similar construction should act similarly, but variations in wiring and deviations from specifications introduce capacity that will in some cases require an ordinary midget condenser for neutralisation. The capacity of the R.F. value used also has a direct influence upon neutralisation.

AN EXPERIMENTAL RADIO-FREQUENCY CHOKE

A USEFUL UNIT TO CONSTRUCT

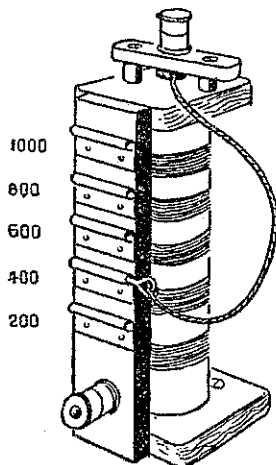
This is a radio-frequency choke for use in Reinartz or other circuits, and for convenience in trying out new hook-ups every 200 turns is tapped, quick connection being made by moving a pin to the required position. If the approximate number of turns required is known, and the choke is for permanent use, the tapping arrange-

is to wind the groups of turns upon a 1/2-inch test-tube.

The overall height, as illustrated, is deep, 1/2-inch wide, and not less than 1/4-inch apart. If the spool ends are not used a small square of wood is 1/2 inches. The central core of wood, the core of a wire spool or other suitable former of 1/2 or 7/8-inch diameter. Five slots are cut or turned, 1/8-inch fitted at top and bottom, and down the front is a strip of ebonite, 1/2 to 1-inch wide. Upon this strip are riveted five pieces of 28's brass sheet, curled up to take the connecting pin (14's wire) attached to the top terminal by a short flexible lead.

The size of wire to be used is 36's s.w.g., 200 turns in each slot. When passing from one slot to the next a loop is made in the wire, sufficiently long to clean up and solder to the corresponding rivet at the back of the ebonite. The lower end of the coil connects to the lower terminal, and top of coil to top brass strip on ebonite. The circuit leads are connected to the two terminals, and moving the pin puts in the required number of turns. The wire is wound irregularly, crossing and recrossing, as this helps to keep down self capacity.

The top terminal is supported upon a slip of ebonite, raised up by screwing down upon collars made by rolling up a strip of the 28's brass sheet.



ments may be left out. A simple way of constructing such a permanent choke

CRYSTAL JOTTINGS

The precise manner in which the rather quaint term "cat's-whisker" first came to be used in order to designate the fine wire metallic contacts which are used with many types of rectifying minerals still remains one of the insoluble mysteries of wireless science. To the average-minded wireless enthusiast who is not blessed—or cursed, as you please—with a vivid and poetical imagination, there are practically no points of resemblance to be seen between the ordinary metallic crystal tickler and the hirsute facial appendage of that noble animal, the feline domestica.

EFFECT OF OXIDATION.

When the volume of sound which is produced by the receiver diminishes, many owners of crystal sets almost invariably blame the crystal itself for the fault. But in many cases, however, such diminution efficiency of the reception is often due to the cat's-whisker becoming oxidised. The remedy is to snip a small portion off the end.

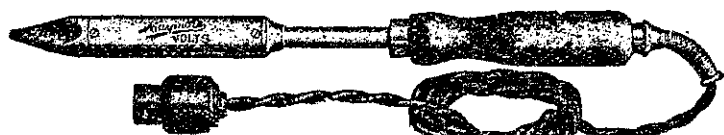
Cat's-whiskers which are made of gold or platinum, of course, do not give rise to this sort of trouble, because they are untarnishable. However, silver takes a considerable amount of tarnish when it is exposed to some atmospheres, so that cat's-whiskers which are made from this metal are not always so free from this defect as is generally supposed.

A NOVEL CONTACT.

The "brush" contact takes the form of a number of fine wires bundled together, and gives very good results with a number of crystals, for when this is used a contact is always made with some part of the crystal, no matter how severe may be the vibration to which the detector is subjected. But, on the other hand, the device works badly with some varieties of crystals, for it is a fact that many radio crystals, and especially some of the patent galena ones, give by far their best results when the contact is made at a single point only. Why this should be so is by no means clear.

In December last, a correspondent, "R.M.," Dargaville, sent in a query which was answered by post. Owing probably to the address being rather scanty, this letter has been returned, so if the information is still desired this correspondent should write again.

Raytheon B eliminator tubes are now stocked by Messrs. Thomas Ballinger and Co., Ltd., Victoria Street, Wellington, at 30s. each plus postage. A Raytheon BH tube delivering not less than 85 milliamperes is suited to most eliminators. The same firm also has in stock the Mullard PU2 full-wave high-tension rectifier for B eliminators at 25s., plus postage. This valve has a filament requiring 1.1 amp. at 4 volts. The DU10 is a half-wave, the filament requiring .77 amp. at 2.7 volts, price 17s. 6d., plus postage.



ELECTRIC SOLDERING IRONS.

Radio Pattern	No. 10026	14/6	15/2	Post Free
Light Duty	No. 10020	17/6	18/2	"
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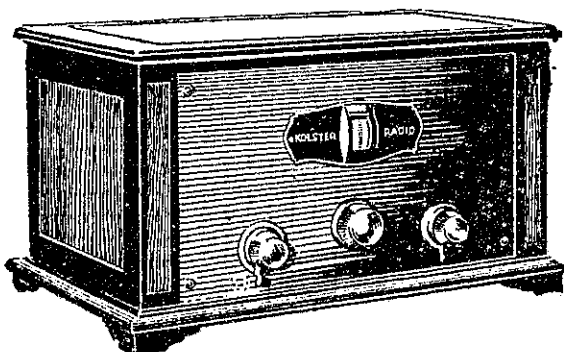
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Construction Continued

A FEW FACTS ABOUT THE LAST AUDIO

By "Megohm"

With the increasing use of B eliminators, the quality of reproduction will, on the whole, tend to be raised, especially when dry batteries give way to the more economical method of high-tension supply. Working from the mains, 20 milliamperes or more may easily be supplied to the plate circuit of the last valve, accompanied by a suitably high voltage of 150 or so. It should be noted that the current, or milliamperes, have more effect upon quality than has the voltage, which latter merely provides the means of overcoming the internal resistance of the valve. For a last stage valve the requirements are high plate current (milliamperes), high grid bias, but not unreasonably high voltage. In practice these conditions are not entirely fulfilled, though they are aimed at. The range of volume is determined by the amount of current passed by the plate of the last valve, although it is only the fluctuations of this current which operate the loudspeaker. The larger this current, the larger the maximum fluctuation possible, and hence the increased volume. So that the actual steady plate current passed is a good indication of output capacity.

To secure good quality reproduction the last valve must both receive and deliver undistorted signals, and when this is accomplished it must be seen that the speaker will reproduce and further amplify these signals without distortion. A good amplifier will give good amplification on the lowest notes that a broadcast station puts out, and if loudspeakers had arrived at the same point on the way to perfection, then average reproduction would now be at a much higher level of quality than it actually is. Amplifiers are being improved so that their amplification is fairly even over a very wide range of audio frequencies, and coupled to one of the few high-grade types of loud-

speaker that exist, results are highly pleasing to a person of musical taste. After all, it is only the music that counts, and experimenters as well as others should accustom themselves to judging the output of their receivers with their musical ear, and make it their greatest care to correct any unwanted tendencies that may be detected in the reproduced sounds. These tendencies are only too often in evidence—wooliness of speech, distortion of low notes, general indistinctness or want of sharpness and clarity, guttiness or raspiness of tone, "tinny" tone, and so on.

Good components will usually give better tone and better general results than will the cut-price variety, and will need less nursing and bolstering up with fixed condensers and other expedients. But even if it has been necessary to purchase some of the less expensive variety, amends can be made to a good extent by careful adjustment and an exercise of common-sense, and the bad tendencies noted above can all be very considerably reduced if not entirely cleared up.

Every receiver will deliver a certain amount of volume without distortion, but whether or not that amount of volume satisfies the owner, depends upon the individual taste, coupled with the capabilities of the receiver. The last audio valve chiefly determines the amount of undistorted volume, provided that the loudspeaker is capable of handling that volume and retain the quality. Take your last audio stage and loudspeaker as one combined unit, you may hitch up before it the biggest receiver with one audio stage that you can get, but the undistorted volume passed by your own audio-speaker unit will only be the same as with your own smaller hook up, provided, of course, that the latter is able to deliver at least right up to the limit where distortion commences.

OUR INFORMATION

ALL POSTAL IN FUTURE

After a few months of dealing with queries sent in by readers, we are able to settle upon a more decided method of dealing with the same. Many queries submitted are of personal interest only, and do not concern the general reader, and many such have always been answered by mail, ensuring an earlier reply in many cases.

This service is intended primarily to deal with any difficulties that may arise in the construction of apparatus described in this column, but other information is willingly given if it does not entail an unfair amount of work or searching. Wherever possible, those seeking information about a particular receiver should enclose a diagram of the circuit. It is not the function of this service to supply a diagram of any circuit that may be demanded, as filed copies cannot be spared.

In future, all replies will be sent through the post, and will be dealt with as expeditiously as possible. Readers will not miss anything by this new procedure, as any queries of general interest that may be sent in will be suitably dealt with in this column, as has frequently been done in the past. From now on, the following rules will be in force.

QUERIES BY CORRESPONDENCE.

1. Every communication enclosing queries must be accompanied by a stamped addressed envelope for reply by post.
2. Questions must be written so that a space is left in which the reply may be added.
3. No charge is made for replies.

Constructors altering the specified gauge of wire do not always realise the great difference that really exists between two even numbers, say, 18's and 20's. The current-carrying capacity is determined by the cross-sectional area. The area of 20's is .001 sq. in., and 18's, .0018 sq. in., or nearly double that of 20's. The current safely carried with liberal margin is 4.1 amps for 20's, and 7 amps for 18's.

AN EFFICIENT WAVE-TRAP

A CONVINCING TEST.

A reader residing at Roseneath, less than half a mile from 2YA's transmitter, writes the following: "I must say a word about the efficiency of the wave-trap circuit published in your column. Although I live in Roseneath and have an unselective Brownings-Drake set, I can easily cut out 2YA and bring in 3YA and 1YA. I have not tried 2BL as yet, but will do so when conditions are more suitable. I find it best tapped at the 18th turn in preference to the 10th."

This circuit was published on January 13th, and is an adaptation of the selective crystal set circuit, which makes a good trap when constructed complete. Readers have already been advised to find the tapping best suited to their situation, and in some cases the inclusion of the whole coil may be found better than a tapping. The crystal set was described on January 6th.

A quality music-reproducing audio transformer now obtainable in New Zealand is the Igranic-Pacnet Super Audioformer, having the high primary impedance of 124 henries and a ratio of 3 to 1. The published curve shows a flat or even amplification from 4000 down to 300 frequencies, which is quite unusual, and, moreover, was made clearly evident by a practical test. In the second stage large volume was handled with wonderful clarity down to the lowest frequencies usually transmitted, and in the first stage results were also highly satisfactory. The International Radio Co. Ltd., Courtenay Place, Wellington, has just landed a supply of these latest transformers.

During the past few weeks quite a number of constructors of the Brownings-Drake receiver have written reporting splendid reception of New Zealand stations, but stating that all Australian stations have been very weak. The reason is chiefly attributable to the fact that whilst daylight saving is in force in New Zealand, the Australian stations cannot be received at good strength until a late hour. Having in mind the usual amount of interference in these stations, the writer seldom troubles to tune them in at the present time.

(END OF CONSTRUCTION SECTION)

Reception on Short Wave

INTERESTING NOTES ON WEEK'S PROGRAMMES

Mr. F. W. Seilens (Northland) writes:—Since writing last, PCJJ has been heard at something like its old-time strength. This is probably on account of the days getting shorter again.

The schedule of JHBB, Japan, has been heard "over the air," particulars of which I will give later on in my notes.

On Saturday afternoon, February 4, KDKA was heard at quite good volume, with talks, music, weather reports, etc. Modulation was not good, or else conditions were not favourable, as speech, although loud enough, was not clear enough to be readable.

As PCJJ was "on the air" early on Sunday morning, I got up for a short time—4 a.m. till 4.45 a.m.—and heard some organ music at splendid volume and modulation. They were transmitting from 2.30 till 5.30, our time, which is too early for most of us.

On Sunday afternoon 2XAF were heard relaying the evening programme of WGY, Schenectady, and WMAK, Buffalo, signing off at 11.57 and 15 seconds, E.S.T. (time more exact than ever). KDKA was very weak.

3LO started at 7 a.m. on Monday morning on 32 metres with the "Washington Post March," which was splendid strength and modulation.

2LG, Goulburn, N.S.W., was testing in the evening.

At 10.45 p.m. JHBB, Japan, commenced their evening test with "Hullo, Hullo. Here is JHBB. . . Here is Radio Laboratory, Japan. Wavelength, 37.7 metres." The hours of transmission were given as "Monday, Wednesday, and Friday, 06.00 till 07.00, 10.00 till 13.00, and 22.00 till 23.00, Greenwich mean time." (This is Monday, Wednesday, and Friday, 6.30 till 7.30 p.m., 10.30 p.m. till 1.30 a.m., and Tuesday, Thursday, and Saturday, 10.30 till 11.30 a.m., New Zealand summer-time.) After these particulars, which were heard perfectly clear on the speaker in good English, the call, etc., was given in other languages. Then a long talk followed in another voice till 11.38 p.m., when JOAK was announced. At 11.40 p.m. JOAK was called by another voice, followed by a few words, evidently the name of the musical item, which followed, a string instrument and man singing. They appear to be very fond of this class of music. Modulation was very good and steady, but static was troublesome.

On Tuesday morning the 40-metre stranger was heard. 2XAD was tuned in at 5.45 a.m., when a piano with man singing was faintly heard. At 5.50 a.m. 5SW was calling: "Hullo, 2XAD. It is still half daylight; we will soon be saying good afternoon." Reports of reception were read, first by 5SW and later 2XAD was heard reading reports of reception of 5SW by him. This was just strong enough to understand the nature of the talk, but not enough to follow properly.

PCJJ was tuned in at 6.30 a.m. on Wednesday, when they started their programme with two band items. This was followed by their usual call, "Hullo! Hullo! Here is PCJJ, shortwave transmitter of Philips Radio Laboratory, Breda, Holland, on wavelength of 30.2 metres. The next item will be, etc."

The volume was very good at first, but gradually decreased till 7.30, when I left them, when it was faint 'phone strength.

Big Ben was heard at 7.30 a.m. through 5SW. The talk following was not readable except for an odd word or two.

At 10.38 p.m. JHBB started their test. Volume was good, and signals readable, but reception was spoilt by jerky, rushing noises.

On Thursday morning the 40-metre was heard. Could only make out "Hullo! Hullo!" Less volume and better modulation would be an improvement.

At 10.40 p.m. I tuned in 2ME, Sydney (I understand this station started earlier, but was not listening before this). They were relaying the programme of 2FC. Reception was excellent.

A short wave friend has heard 2MR from 7.30 a.m. on two mornings recently.

The 40-metre station again heard on Friday morning. PCJJ started at 6.34 a.m. with music on bells; this continued with short intervals till 7.30 a.m., when I closed down. Volume at first was quite good speaker strength, but decreased to weak 'phone at 7.30 a.m.

JHBB was heard in the evening, but reception was spoilt by static and morse interference.

On Saturday morning music was heard faintly from 2XAD about 6 a.m. 5SW was not heard till 6.15 a.m., when "Hullo! 2XAD, 5SW calling. We are sorry we are late, but we had a storm here and lightning—airial. We are going to send you gramophone records till 6 o'clock." Several records were then put on. At 6.33 a.m. he again called 2XAD, and repeated the message re storm and closed down without any chat as usual. Signals were fairly strong, but unsteady.

A MYSTERY STATION

SOLUTION SUGGESTED.

A. P. Morrison (Brooklyn) writes:—The past few weeks SW reception has been good with me. On Sunday, January 29, I received an excellent SW programme from Station WLW, Cincinnati, Ohio, their programme being an anniversary programme. I first logged him at 7.15 p.m. and their

programme continued on till 12.15 a.m. Monday morning, and right throughout was good loudspeaker strength, between 8 p.m. and 10 his music was quite audible on one valve with phones. Items heard were selections (musical) by the Stone family, vocal items by Madrigal Quartet, one item ("I Left my Girl Standing in the Rain"), and a talk in regard to a radio competition to be held. The latter part of the programme was made up by Wirlitzer items, two items being ("Rocked in the Cradle") and ("Valencia").

On January 27, Friday, I received the Japanese SW station JHBB operating on a wavelength of 37.7 metres at 10.45 p.m., and he was still going at 12 p.m. when I closed down. I also received this station on Friday, February 3. When first receiving this station his transmission was not too good, but he seems to be improving at each transmission because to-night his modulation is perfect good loudspeaker reception on three valves. This musical item reminds you of the Chinese records you sometimes hear—very funny to listen to. Perhaps I am like your weekly SW correspondent in last week's "Radio Record," no ear for that class of music.

The Mystery Station. I have often listened to the strange stations on 40 metres between 6 a.m. and 7 a.m., and I believe this station to be a Swedish one, his call sign being SAJ.

Last night, Thursday, February 9, at 11 p.m., I received 2FC, Sydney, SW station 2 ME, operating on 28.5 metres, and had perfect reception. This station has improved somewhat, some of the items heard were studio orchestra, some items being (Pandora) vocal (Blow Winds Blow), (I Hear You Calling Me), a speech relayed from Canberra, I think (given by an engineering president). When this speech finished I heard the announcer say very softly ("Have you finished?"), and the reply was ("Yes"). In one part of the transmission they called America and Canada, and thanked those who had sent them letters in regard to above transmissions.

PCJJ comes in at good loudspeaker strength. Last Saturday afternoon I listened to KDKA for a short time, but with me his strength was not too good. He closed down at 4.50 p.m.

3LO ON 36 METRES EVERY MONDAY MORNING

HEARD IN NEW ZEALAND.

Some New Zealand listeners on short-wave are making the practice of having 3LO music at Monday morning's breakfast!

A Melbourne writer says:—"In spite of pessimistic comments in misinformed papers, the long-distance broadcasts on 36 metres every Monday morning from 4.30 to 6.30 (7 a.m. till 9 a.m. New Zealand time) are proving the progressiveness of 3LO Melbourne, and exhibiting consistently good results. Reports continue to arrive almost every mail as to the distance covered and the clarity of the reception in almost every part of the world. If only the average suburban and country listener could properly appreciate the possibilities of short-wave reception, there would be less debating about the utility of these tests. As it is, to get down below 200 metres or so is foolishly regarded as extremely complicated."

NOT A FAD.

"On the contrary, the essential beauty of short-wave, long-distance work is, undoubtedly, that you can't tinker with your set, and so your faculties are set free to 'listen-in.' The adjustments necessary are actually fewer than many medium and long wave sets demand, but for some reason the ordinary mortal 'funks' short-wave reception, and regards it as the fad or perquisite of the inner few. This is an entirely wrong attitude to take up, and if more listeners, even though local, were to tune down to 36 metres on Monday mornings, they would undoubtedly be helping along the progress of this newest development."

"Perhaps some day 3LO Melbourne will broadcast a secret programme on 36 metres and offer a prize or so for those who correctly place the items. Meanwhile, it's not too cold these mornings at 4.30 to 6.30 to get up and practice on this new wave-length, and 3LO Melbourne would welcome reports even from nearby listeners on every aspect of its reception."

THE PUBLIC NOT PLEASED.

A Melbourne correspondent writes:—"Any comprehensive alteration of the wave-lengths such as is apparently contemplated is a serious matter. The listeners have been subjected to the

annoyance of changes before, and the radio trade is likewise embarrassed. The change from the long to the short wave-lengths a year or so ago was the cause of considerable complaint. When 3LO started on 1730 metres people purchased sets with a wave-range suitable for that wave-length. The home-assembled sets—and there were many of them—were put together on the same understanding that there would be no need for any drastic alteration in the tuning elements of the receivers.

"Whatever was the cause of it, the 'long' wave-length did not last long, and the agitation for and against the alteration was widespread, but the effect of the alteration was generally satisfactory."

INTERESTING TESTS

RECEPTION STRENGTH.

Interesting experiments and tests on the strength of reception of 3LO, Melbourne, were recently carried out by Mr. R. O. Cherry, a bachelor of science. In a report on his work Mr. Cherry writes:—

"One new and important fact that has come out of the work so far completed is the peculiar effect that hills have on the field strength distribution. From a number of observations it appears that at the top of a hill the field strength is much greater than it is on the level ground at the base of a hill. In one case the ratio was nearly 2.1 on a hill 300ft. high, and effects of the same order of magnitude have been observed elsewhere. The theory of this effect is far from complete, and more observations will be necessary before the full details have been examined."

HILL POSITIONS GOOD.

"This hill effect, as we may call it, plays an important part in determining the nature of the service given to the listeners-in, since the ground rises steadily to the west, north and east of Melbourne, causing a natural increase in field strength over that normally expected. From the observations already taken it appears that it is not merely the height of a hill that determines the increase in field strength, but also its outlook in the direction from which the wireless signals are coming. Thus, at Studley Park (a suburb of Melbourne), at the top of a steep slope facing in the direction of Braybrook (where 3LO's transmitting aerial is located), the field strength is proportionately 25 per cent. stronger than it is at the top of Queen's College tower, 100ft. high, standing on ground higher itself than Studley Park."

AUSTRALIAN WAVE-LENGTHS

ALTERATIONS PROPOSED.

The idea that the Commonwealth Government proposes to alter the wavelengths of the Australian broadcast stations persists in well-informed circles in Melbourne. It is not expected, however, that any of the new wavelengths will be above 500 metres, although it is possible that some of the second grade stations will be placed below 250 metres.

Any reader contemplating the installation of a transmitter should secure a copy of "The Radio Amateur's Handbook," a valuable book dealing with the whole subject from A to Z. Copies of this publication have been difficult to obtain, but a supply has been received by the Te Aro Book Depot, Courtenay Place, Wellington, where the book may be procured for 5s., plus postage. Quite an amount of information of value to the ordinary experimenter is included.



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Maori Pageant a Great Success

BUDGET OF LISTENERS' VIEWS

From the numerous congratulatory letters received in connection with the Maori Pageant broadcast it is possible only to select a few for reproduction. All, without exception, admire the harmony and balanced work of the party and not a few express the desire for "more."

Special School, Otekaika.

Kindly pass this message to the people of my race who performed and took part in the Maori Pageant commemorating the signing of the Treaty of Waitangi:

To my people of the Maori race who performed and took part in commemorating the signing of the Treaty of Waitangi, I highly congratulate you all for the wonderful performance you have made in staging this great event. I am only sorry that I was not there in person to see you personally but as it is, thanks to the Radio Broadcasting Company of New Zealand, I was able to hear and follow your every word and movement with a receiving set. I am very proud of you all. Heoi ra kia Ora katoa koutou.

Station 2YA, I congratulate you, too, for the wonderful services you rendered in broadcasting the Maori Pageant. Although we were slightly troubled with signals fading, I assure you my friends and I thoroughly enjoyed every item broadcast by 2YA both on the 6th and the 7th of February, 1928. I thank you—I am

*Yours sincerely,
HORI HEREWINI NGARAE.*

The Welcome Home.

A COMPREHENSIVE letter received from Wanganui states that great enthusiasm obtained in that city in connection with the broadcast, and most of the citizens appear to have been listening in. The radio dealers of the town were alive to the opportunity, and many had their sets going, with the result that the streets nearby were crowded with enthusiastic listeners. Private sets with loudspeakers were besieged with visitors, so that as an outcome everybody on the days following was talking about the broadcast with hearty approbation.

The appreciation of the citizens of the part played by the Maori party was indicated by the fact that a welcome home was extended by the Mayor. There was a large crowd to meet the returning party. After the welcoming speeches had been made and acknowledged, the famous chorus "Haere, Haere ra e Hine" was given, and was much enjoyed by the crowd. "The party," says one account, "seems now to be almost as famous as the Wanganui Garrison band in its palmy days."

Old Country Appreciation.

"AS a visitor from the Old Country," runs another letter, "I thought I would just like to write and say how much we enjoyed the Maori programme presented on Monday evening. We listened-in on a neighbouring farm where they had a five-valve set. The transmission was perfect, and I considered the melody and part singing extremely good and very interesting. I congratulate the party, one and all, for the good time they gave us."

"Impressive and Solemn."

Jno. H. North (Pukehina, N. Wairoa): I feel it my duty to write to you and ask you if you will kindly convey to the Maori party, who so wonderfully and ably performed last evening our high appreciation of their musical talent and speeches. Friends and myself were listening in on an American set. The reception here was as clear as a crystal. We are a distance of about 120 miles from Auckland City, and living alongside the Kaipara Harbour on a very high hill. We could distinctly hear the tap of the pois 20 to 30 yards away. The Memorial Hymn was deeply impressive and solemn. I myself was at one time a missionary among the Maoris, so could clearly picture to myself the various hakas, etc.

Distant Maoris Listen In.

S. Caird (Ruapaka Island, via Bluff): I am writing to let you know that we

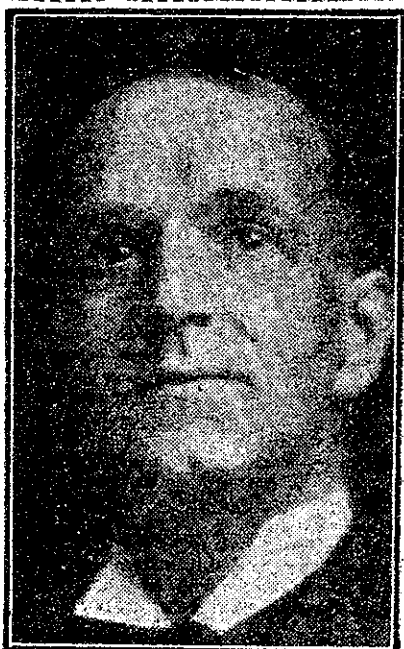
heard and much appreciated the Maori concert that was broadcast from Wellington on Monday and Tuesday nights. We listened both evenings, but the first evening's reception was much better. Five Natives (Maoris) on this island came along to my house to listen, and they were delighted to hear Maori items so clear.

West Coast Admiration.

M.B.C. (Greymouth).—As far as Greymouth listeners are concerned, I have interviewed many, who consider the effort an unbounded success. The blending or harmonising was beautiful, so much so that I listened-in again on the second night until the finale. The programme was next-door to perfect, with the exception of slight fading from 11.30 p.m. to about 12.15; but, putting everything aside, Wellington (or 2YA) paves the way in all cases of amusement on the air. I highly commend the Maori company for their excellent programme, and hope to hear more of our Native race.

Greatly Appreciated.

A. Hunter (Richmond).—I wish to thank, as well as congratulate, you on the success of the "Treaty of Waitangi" concert.



—S. P. Andrew, photo.
MR. O. KITSON,
to whose training and conductorship of the party much of their success was due.

"tanghi" concert. So far as I am concerned, it is by far the most satisfying entertainment I have heard over the air. I sincerely trust that it will not be the last of its kind. Such material as that concert contained must be of enormous educational value. It may interest you to know I am the master of a home for old people. As the result of public subscriptions I obtained a set. Two speakers are always in operation in different parts of the home. The inmates and staff consider the radio programmes have improved very much during the past few months. Of course, old folks like old-time material. Wishing you continued success in the production of such programmes as your pakeha-Maori concert.

Congratulations.

Charles E. Wheeler (Wellington).—As it is usually only the complaining critic who writes letters, I thought it but reasonable to express my views on last night's Maori pageant. You seem to have happily mastered the technique of utilising the microphone to put over the right atmosphere. The programme was, to my mind, well organised, well balanced, and it was a good feature that it kept going without delays. The strict time limits enabled ample variety to be given, and the items appealed to me as providing a fine blend of entertainment, with a good deal of interesting instruction. Congratulations to 2YA, and thanks to the excellent performers.

One of the Finest Yet.

G. S. Simmons (Hamilton): I should like to express my appreciation of your broadcast of the Maori pageant. I think it is one of the finest programmes sent out from the New Zealand stations.

I am using a home-made two-valver,

from you direct without resorting to 1YA. Both 1YA and 2YA had a background, due no doubt to the rebroadcasting. Hoping for some more programmes like this one.

Give Us More!

H.C. (Auckland): I would like to express my deep appreciation of the relay of Maori pageant on Monday and Tuesday evenings this week. I was delighted with the entertainment both evenings, more especially the latter, as numerous friends came and were also delighted. I think the management would do well to consider the exploitation of Maori talent, for it would be, in my opinion, a great asset and well received.

Transmission Great.

A Really Satisfied Listener (Milton): I must write and thank you and the Maori party for the really splendid programme that has been put on the air to-night. I was not able to listen in last night, so waited up to-night, and it has been every bit worth while. The transmission has been a great treat, there being practically no fading and very little static. I am using a six-valve single control. Wishing you every success, and again thanking you.

Perfect Transmission.

W.C. (Gonville): I have just finished listening to your Maori pageant broadcast, and I feel that I must write to you to congratulate you upon this transmission more especially. It was an unprecedented success from start to finish, and I am sure has been appreciated throughout the length and breadth of the country. It was simply wonderful—more especially to one who has at different times heard and seen almost every item performed, not once, but many times. I feel sure that you will receive many requests in future for Maori items, especially by those to whom the performance has been a novelty. Reception was perfect. It was a wonderfully conceived idea, superbly carried out.

Praise for Stations.

S. W. Strong (Gisborne): The Maori performers deserve much credit for the quality and excellence of their items on the Waitangi Anniversary. Further, the four B.C. stations also deserve congratulations on the manner of their transmissions.

Reception strengths were as follow:—

	Monday.	6 p.m.	9 p.m.	10 p.m.
1YA ...	4	5	6	Slight fades.
2YA ...	3	5	6-7	Bad fades.
3YA ...	3	5	5	Slight fades.
4YA ...	1	1	2	?
	Tuesday.			
	11 p.m.	12.30.		
1YA	5	7	Musky, bad fades.	
2YA	6-7	9	Slight fades.	
3YA	6	7	Slight fades.	
4YA	3	4	?	

TO DO OR NOT TO DO

THE DEMONSTRATION PROBLEM

AN INGENIOUS PLAN.

An American radio company manager states:

When a prospective buyer comes into our store and asks for a demonstration, our first move is to ascertain whether he is sincere and really intends to buy, provided the set suits him, or whether he is just another professional demonstration hound. It is not always possible to tell the one from the other by sight or from the preliminary conversation. If it were, the "professional" could be disposed of very quickly. Here is a system we use which has proven very effective and which does not offend the real buyer.

We agree with the prospect that a demonstration is a fine thing. Then we explain to him that we have every faith in the set that we sell. We impress him with the fact that that is the reason we handle the makes of sets which he sees before him. We further stress the fact that we will put our set up against any other make sold in this city and let him be the judge. Then we spring the real punch to our little idea.

DEMONSTRATE COMPETING SETS.

We tell him that the only way to compare sets is to have them all together in the same place, on the same night, and to tune them in on the same station, one after the other, then he can decide on the spot which is the set to buy. At no time do we act as if we didn't want to demonstrate our set; on the contrary, we make it plain that we do want to demonstrate, but in competition with the other makes sold in this city.

After we have elaborated on the necessity of trying out the different sets on the same evening, we state that any time that will suit our competitors will also suit us. We urge him to go to the other dealers whose sets he is interested in and find out when they can give him a demonstration; then if he will let us know ahead of time we will be on deck too, with our set, ready for the test and demonstration.

The result of this offer is that the demonstration "nuisance" is scared away, never to return. The sincere prospect comes back and in many instances we sell a set, frequently without the comparative demonstration test. At no stage of the game have we offended the prospect or even told him that we won't make a demonstration.

On the contrary, we have jumped at the chance to make a demonstration, and under the most trying conditions. This little stunt has saved our company countless hours of valuable time and hundreds of dollars.

GOOD MUSIC

ARE PROGRAMMES TOO HIGH-BROW?

LISTENERS' COMMENTS

"I have never been a lover of really good music, nor a lover of jazz, but I am just beginning to appreciate what good music really is."

An Auckland correspondent makes this remark after praising very highly a recent programme from 1YA—the best I have ever heard from any station, and I have been a consistent listener for three years," he says. His remark is apropos to criticism by a few people who declare that the programmes from the stations are too "highbrow." The writer of the letter from which we take the extract appearing above also admitted that he had been a very keen critic of the so-called "highbrow" music broadcast, so his acknowledgment of the enjoyment he now derives, owing to his enhanced ability to appreciate good music, is all the more interesting. There is in what he says something for all music lovers to think about. It indicates the possibilities of radio broadcasting.

People are naturally conservative, and a new thing is looked at askance, so it will take some time before radio broadcasting, like all inventions and discoveries, settles into its accepted place in modern life. Exactly what that place will be no one can say. It assuredly will be a very useful part. The advent of broadcasting marks the dawn of a great revival in music. Broadcasting is here to stay, and that being so, it should be accepted and made the most of by everyone in all walks of life. It is a utility. It can be used to an unlimited extent to educate and entertain. Music lovers must see in broadcasting a means of helping the great cause of music. By giving young men and women the opportunity of hearing good music, broadcasting will train them in musical taste and appreciation.

Incidentally, the health of the people will be improved. Sir Henry Hadow, of Sheffield, recently referred to the great physical value of music, its healing power, its profound emotional influence, and also its intellectual value. Music, he said, was a language not only as beautiful, but as complex, as involved and closely reasoned as the language of Shakespeare, and just as worthy of study. Sir Henry is not the only one who bears testimony to the great benefits which health derives from singing. It is universally acknowledged. Broadcasting, in fostering the love for music, is therefore benefiting the health of the people. No greater medium for the intellectual and artistic uplift of the nation than this modern miracle of radio broadcasting can be conceived.

In order to obtain the best results, broadcasting needs the help of every sincere musician. All municipal authorities, local musical societies, and leading musicians should join in assisting towards the attainment of a high standard of music. By utilising radio, the best music can be brought to thousands of musically starved people, when only hundreds of musically well-fed people attend a concert. A band, a singer, or an instrumentalist playing at 2YA is heard by a great many thousands of people, but how many would hear them if the concert were in the Wellington Town Hall? A small percentage of those who would hear if the concert were broadcast.

Those who are denied good music are denied much of the richness of life. Musical appreciation and the opportunity to enjoy music will broaden one's horizon and brighten the world one lives in. Education authorities have long recognised the power of music to develop and refine human character. Our own Government has taken a very advanced step in this direction in the appointment of a director of music for the primary schools.

Radio must inevitably become the most direct, popular, and efficient means of developing the public appreciation of good music, and it is therefore essential that the utmost care should be exercised in supervising the class of music selected for broadcasting. All good music must have a refining and elevating influence, but certain music is apt to have the reverse effect.

PCJJ transmitted a special Beethoven programme, which was received all over the world, and was even relayed by other stations. On March 11, 1927, it established telephonic communication with Bandoeng, Java, and on May 31, 1927, Queen Wilhelmina and Princess Juliana addressed the Dutch Indies through PCJJ. Finally, on August 14, 1927, the Australian High Commissioner in London spoke to Australia through Rindhoven, where the Phillips experimental station was at that time.

The "Howler"

NEED FOR SUPPRESSION

EDUCATION REQUIRED

Dr. Herbert Ziele, an enthusiastic radio listener, of Napier, writes somewhat despondently of troubles in securing reception because of "howlers." We publish his letter in full in the hope that an educational campaign may be embarked upon where necessary. We add our comments upon the position at the end of the doctor's letter.

Sir,—Six years ago I became an enthusiastic listener, and although I am just as keen as ever I contemplate scrapping several hundred pounds' worth of radio equipment.

In the old days when Gisborne, Auckland, etc., were on the air it was possible to have one or two nights a week free from interruptions from howling valves, but now it is absolutely impossible to hear even one item clearly in the evening. I understand that for some time there have been radio inspectors in the four centres. If that is correct surely the time has arrived when other towns can be under supervision. It is a very short-sighted policy on the part of the Government, because for every set registered they get five shillings. I can assure you that this howling valve nuisance has prevented many people in Napier from purchasing sets. I am frequently asked by prospective buyers if I would recommend their going in for radio, and my reply is, "That depends upon where the set is to be installed. If you propose residing in one of the four centres, yes, but if in Napier, no. Will you call upon me at my house, and I will demonstrate my set and you can decide the question after you have heard what radio is like."

Not one listener-in, who has been my guest, has to my knowledge joined the ranks of the vast army of "listeners-in." Had the reception been clear on any one night during these years when prospective buyers were present I am positive (had I been a salesman) I could have sold a set every evening.

My outfit is a Golden Leutz silver ghost, which I believe is equal to any set on the market. I will say this, that sometimes in the afternoon, 2YA comes in crystal clear, but in the evening it is utterly impossible, and unless radio inspectors are sent to Napier to clear the air from these howling valves I shall be compelled very much against my will to quit. Some two years ago the Napier Radio Society received a communication from Wellington asking this society to nominate two of our number to act as radio inspectors. This we did at once, and forwarded their names to Wellington, and up to the present nothing further has been heard as to when their duties are to commence.

Three enthusiastic listeners-in have erected sets with frame aerials, and have calibrated the whole of Napier, and on several occasions have with great accuracy crossed the actual house of a listener-in who has a set which can be heard howling on every evening; but they are powerless to act. I appeal to you through the agency of your valuable paper to express your opinion on this all important matter.

Listeners who suffer from howling valves and interference on the part of others have our fullest sympathy. Willing as the Government Department and officials may be to co-operate in this matter, it is, we think, fairly obvious that the expense of such a procedure over the whole country would be prohibitive. It seems to us that this is a matter which falls directly within the scope of radio societies and listeners' leagues. It is to our mind unthinkable that any listener who has been located and identified as a howler would be averse to receiving instruction from those competent to give it as to how he might rectify the trouble and avoid being a nuisance to others as well as to himself. Our correspondent's letter does not say whether the particular listener specifically referred to has refused to rectify matters, or whether an attempt has been made to induce him to do so. If methods of moral suasion fail, and it is necessary to give duly accredited representatives of radio societies' executive power in connection with this matter, we think a concerted effort in that direction to the Government would meet with success. We on our part would certainly advocate the giving of necessary power to duly accredited representatives of listeners, so that they might prevent objectionable howling on the part of inefficient sets.

The Broadcasting Company in itself suffers from the same nuisance; that many listeners do, and on the occasion of several attempts to rebroadcast short-wave receptions from overseas has had to acknowledge failure, primarily because of the howling valve nuisance. If listeners themselves will take this matter in hand vigorously they can be assured that both the Radio Broadcasting Company and ourselves will give every support possible to effect improvement; but, having regard to the scope of the country and the cost involved, we are afraid it is a task beyond the Government or any Department. Our columns are open for the views of others on this important subject.

Dr. J. H. Dellinger, chief of the radio laboratory of the Bureau of Standards, U.S.A. before leaving for Europe on a three months' tour, sent Canada a piezo oscillator as a means of checking the frequencies of its broadcasting stations, thus avoiding possible radio disputes between the United States and Canada. It is now possible to govern the frequency of a broadcasting station to within a few cycles by use of the piezo-electric effects.

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Our Mail Bag

Daylight-Saving Cursed.

Dairy Farmer, Aria.—I think it is a good idea to get the opinion of the dairy farmers on this matter of daylight-saving. I have spoken to nearly all the farmers round this district about it, and they nearly all give it a good round curse. Personally, I do think it is the most useless and silliest piece of legislation that was ever put through Parliament, and I do hope it will die a natural death this next session. The funny thing about it is the author of it is a lawyer, and gets up about 8.30 to his breakfast, and then reads the morning paper before getting to his office.

Less Growls and More Credit.

Pansy (Peone).—For some time past I have read, sometimes with interest, other times with disgust at the many complaints from listeners-in. What a happy world it would be, if we would always look for the best in everything and everybody, instead of the worst. Some folks want news cut out, others lectures, jazz, snipping, etc. Are not some a little sensu? They surely forget that some folks have receiving sets, with the object of hearing arrivals and departures at various ports or ships, so that they can trace their loved ones and get into communication by telegram with these men that are doing their bit in bringing coal, etc. to Wellington. When I strike an item that does not interest me, I am content to listen, feeling there are many people interested. With reference to the broadcasting stations they deserve every praise for their untiring efforts in trying to please the public in spite of the many criticisms they get at times. When we look at the great improvement and longer hours of the programmes we are indeed certainly getting good value for our £1 10s. per annum license. Wishing the Broadcasting Company every success.

"Flaming Youth's" Idea.

Young Buck (Fort Anami).—Behold! Another critic wishes to voice his opinions of programmes. The artists are o.k. But why should we, of the "flaming youth" generation, be compelled to listen to them alter item or classics? Couldn't there be more popular music selected? Or is New Zealand devoid of vaudeville artists, such as the Aussies have? I don't mind military bands, or occasionally something classical; but listen to this—a few evenings ago I tuned in to 1YA—an instrumental trio, 2YA and 3YA ditto all at the same moment! Now I wouldn't have minded if there had been any tuncful air in the compositions, but it sounded more like scales or a musical study. Mind you, a programme of jazz is just as monotonous, as I have been brought up in a combined musical atmosphere. I don't wish to offend the artists as their technique and harmony are wonderful; but can't they play popular music? When you come to consider that the majority of listeners are of the younger generation, couldn't something in their line be put out more often? I read in last week's "Record," in "Switch's" column, of a prominent Sydney musician's opinion of "high-brow" music. It should have been given a full page in large type!

Good Results from "Megohm's" Four-valver.

S. G. Taylor (Levin).—I am writing this note concerning the performance of a four-valve Browning-Drake set, which might prove of interest. 2YA is the only New Zealand station at present giving good results; volume good, and no fading. 3YA and 1YA, however, are quite good at their loudest, but fade very badly. 3YC, Christchurch, comes through well, considering its power, and does not fade so much as the two larger stations. The Australian stations are the ones for

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volume, however. The 8 o'clock chimes last evening (Thursday) from 2BL could have been heard half a mile away, the volume being more than twice that of 2YA. At 9.30 p.m. 2BL is excellent speaker strength, and on three evenings of this week the same station was distinctly audible on the speaker, using only two valves, and with earth and aerial switches disconnected. 2PC, 4QG, 3LO, and 2GB were also good speaker strength at 10.30 p.m. last evening. 2KY was also audible all over the room, while 7ZL, 3AR, and 2UW were also on the list. A soprano solo was also heard from an "Aussie" station between 2BL and 2GB. The above results were obtained using 2 p.m. 3's and 2 p.m. 4's, with about 80 volts on the plate. For a set of moderate price, and very economical running costs, the Browning-Drake four-valver, such as described in the "Radio Record" by "Megohm," will take a lot of beating.

Gramophone Reception.

Mrs. A. A. R. (Wanganui).—Having been a keen listener-in since the initiation of 2YA station, I must congratulate them on the nature of the programmes they put over the air. Reception here in Wanganui is well-nigh perfect, and in the evenings especially. The variety of gramophone items during the afternoon sessions cannot be criticised, but one thing strikes me as being very marked—it is the speed at which the records are played. Most of the records are set at too low a speed, causing them to drag badly, spoiling reception beyond doubt. H.M.V. records should be played at a speed of 78 revolutions to the minute, and Columbia at 80 revolutions. These I have tested with my machine (an H.M.V.), and find that best results are arrived at by being careful to regulate them thus. Since noticing the drag in reception I have tested the pace of the records broadcast from 2YA with my machine, and found that they were placed at a speed of 75 revolutions. If this question were looked into I believe it would greatly improve reception for listeners in the afternoon. The player piano items are in comparison exceptionally clear, which seems to prove that there is some fault somewhere in the gramophone items. Seeing that it is to our mutual interest, I write this in the hope that it may prove of some little use in helping to satisfy afternoon enthusiasts, and not to mention the ever-increasing hope of more licenses. We had quite a number of friends spending the evening listening-in on the night of the "Maori Pageant." Hardly a word was spoken during the whole of the performance. That, in itself, is the biggest compliment that can be paid. We were unanimous in pronouncing it yet another success to 2YA's already splendid achievements.

Some Suggestions.

D.T.C. (Nasterton), being a subscriber to your excellent paper, I would like to make some comments on the programmes broadcast by 2YA, and to add a little of what I hope to be constructive criticism. I enjoy very much the items put over by this station, particularly those given by the "Symphony-Short" Trio, both as soloists and as a trio, and also the singing of Miss Myra Sawyer and of Mr. Len Barnes. Certainly the most completely enjoyable evening I have spent in listening to 2YA was the night of the studio presentation of "Maritana" some weeks back. It is the opinion of a number of listeners, and it is certainly mine also, that 2YA "talks" too much. The most interesting "talk" I have heard from that station was that given by an American gentleman, some weeks ago, regarding the production of moving pic-

4YA NOTES (Continued)

On Friday afternoon a representative of the D.S.A. will deliver a "Fashion Talk" from 4YA.

Friday evening's programme will include many popular ballad songs of the past and present age. Mr. Neill Black (bass) will sing "Mountains of Mourne," "My Old Shako," and "Two Eyes of Grey." Other singers will be Mr. Bert Rawlinson, Mrs. D. Carty, and Miss Flora Williamson (contralto).

A newcomer to the microphone on Friday will be Mr. Gordon Findlay, one of Dunedin's leading pianists. He will present a group of classical numbers.

Listeners on Saturday evening will receive another musical treat from 4YA. A splendid programme has been arranged, including the following artists:—Miss Molly Vickers (mezzo-soprano), Miss Edith Morrison (soprano), Mr. Dan Fogarty (Dunedin's Irish tenor), and Mr. Percy James, probably the best-known humorist and entertainer in Otago. The instrumental portion of the programme will be provided by Miss Eva Judd (violinist), and Miss Muriel Caddie (pianist), and Mr. D. J. Robertson (cornetist).

In contrast with some New Zealand racing clubs, the Australian racing clubs welcome broadcasting from their meetings as a means of advertising the sport. The first efforts of 4QG, Brisbane, to cater recently for the racing public have been so successful that the descriptions of the races at Ascot are to be augmented early this month by descriptions from Albion Park. Many congratulatory letters from country enthusiasts have reached the Queensland Radio Service since these additions were made to the programmes.

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The Children's Corner

By "ARIEL"

Dear Radio Boys and Girls,

I wonder how many of you were allowed to stay up late enough to listen-in to the Maori pageant last week. It certainly was rather late, but I hope lots of you heard it because it really was a most important event in the Radio World, and one that you should remember for years and years. I think the Maoris themselves got every bit as much pleasure from their performance as they gave. They all looked so jolly and full of fun, enjoying every moment of it. Of course, you all know what the pageant was about—the history of the Maori in New Zealand from the time of his arrival here right up until to-day—and of the signing of the Treaty of Waitangi on that particular day eighty-eight long years ago. The chief spokesman of the party (Whose name I can't spell!) got up and said "How-d'you do" to all listeners-in by way of a beginning. He was such a big man and looked splendid in his native costume, but he WAS so hot and bothered before he began. I think he had a sore throat, too, because he seemed to need such a lot of cough lozenges! I wonder if he felt as nervous as some of you did the first time you recited to a microphone? It is a rather dreadful feeling, isn't it? However, he got on famously, and told how the Maoris lived in the olden days, before they were civilised, and described the arrival of a travelling party at a Maori pah. The welcome they gave their visitors was wonderful; the haka party certainly did not spare themselves! After exchanging speeches, food was handed round, to a weird kind of chant (not real food, of course, only the pretend kind), and the Maori girls did such a pretty poi dance and sang songs. Then after that they talked a lot about the Treaty, which was very important but wouldn't interest you very much, and also about the help given by the Maoris in the Great War—how brave they were, and how well they fought; and after that there were more poi dances with those fascinating little balls on string which you could hear tap-tapping through your loudspeakers if you listened.

Then at the end there was a pretence garden-party given in the grounds of the chief, and more songs and most exciting hakas. The faces they made were just lovely, and the noises were better still! They rolled their eyes and put out their tongues and stamped their feet and shook their fists, and altogether behaved in a most alarming way; but when it was over they had a good laugh at it themselves! But it was rather a relief to see them looking good-humoured again! I don't think I'd care to make them feel really annoyed!

The girls were so pretty, with their large dark eyes and soft voices, and they sang so many sweet songs; but best of all I liked "Home, Sweet Home" which they all sang together at the end.

After the evening was over the Maori party had a photograph taken by flash-light in the studio, which makes quite a nice picture which you will see for yourselves in another part of the paper.

There was only one little Maori girl at the studio and she fell asleep before the performance was half-way through, but no doubt she had heard it all before and was tired out with the many excitements of her visit to Wellington.—Yours,

ARIEL.

UNCLE LEO

TO TAKE A HOLIDAY.

On account of ill-health Uncle Leo, of 1YA, is to take a holiday from the children's sessions on Tuesday evenings. This will be sad news for the kiddies, with whom Uncle Leo is a great favourite, and they will, one and all, join with the grown-ups, who also listen in to Uncle Leo, in hoping that it will not be long before he comes to the microphone again. However, there is some good news for all, and that is that Uncle Leo will not give up the children's session on Sundays. Uncle Leo loves all work for the children, and it is only owing to stern medical advice that he is giving up the week-day session.

FOR THE BOYS AND GIRLS AT 2YA

Lots of fun for the young folk this week at 2YA. Note these dates:—Again on the 20th "Toby" or "Jeff," the funmakers, will entertain everyone. Oh, yes, they'll make you laugh. Tricks—songs and sketches unending.

Hurrah for Uncle Jasper and Spot! On the 21st they will wait you away to the land called "Good Cheer." A merry party of Miss Petersen's pupils will assist.

The 23rd we shall spend a jolly hour with Uncle Sandy. He has merry little ditties and birthday rhymes in store for you all. A party from the Trinity Methodist Sunday School, under Mr. Crewes, will join in our revels for the night.

Uncle Ernest 24th? That's a day to anticipate. Uncle Ernest has stories and fun for you. His merry little troubadours will be as bright and spontaneous as of yore.

Aunties Gwen and Dot, with their box of tricks, will toe the line at 6 p.m. on the 25th. See how quickly the tricks fly out.

CHILDREN OF 3YA

The next week's programmes are: Sunday.—Children's song service, conducted by Uncle Sam, with hymns and solos by cousins from the Congregational Sunday School.

Monday.—This is the night Uncle Jack tells his stories, among them the story of "The Water Babies," and Aunt Edna sings her good-night songs.

Wednesday.—An hour with Uncle Peter and Mother Hubbard and their merry band of entertainers.

Thursday.—Uncle Sam and Aunt Pat will provide a merry hour's entertainment for the little ones; cousins Geoff, Joan, and Patty helping with songs, duets, and solos.

Friday: Big brother in stories for the bigger boys. Aunt Pat for the Tiny Tots. And a merry band of cousins from the Addington School in part songs and choruses.

Saturday.—Uncle Sam in Saturday mood in song and story, Aunt May helping with her merry music.

GOOD FARE FOR 1YA KIDDIES

The children's hour at 1YA (Auckland) continues to improve each week, and clever little "Cinderella" is always providing new ideas and new competitions for the entertainment of her large and ever-growing family. The reappearance of "Genial Jimmy" was a jocular event for the children, for he has a breezy and entirely unconventional style that catches the fancy of the young listeners every time, and he is blessed also with a wonderfully infectious laugh.

Then very shortly "Jack and Jill," a rollicking and happy pair of "musicians" and pianists, will be heard in nursery songs, sketches, and stories. These will, it is hoped, be followed shortly by Cousins Pat and Cyril, who tinkle the piano to some purpose, and with whom will appear Aunt Manue, singer of sweet songs for the children. Now, isn't that good?

A "musical" competition is now "in the air," and on the air, and the idea has caught right on with the kiddies. "Cinderella" having described a "radio" wedding party, proceeds to tell the eager listeners-in, with well-known musical items (furnished by "Bluebell" at the piano), the names of the bride and bridegroom, what the bride wore, what her bouquet was made of, where they went, etc., etc., and the children must guess all the answers from hearing well-known nursery rhymes played on the piano. For instance, the bride's name ("Mary, Mary, quite contrary"); her bouquet was composed of ("The Blue Bells of Scotland"), and so on. The competition closes on Saturday, February 18, when the winner will be announced, and the prize sent to the lucky one. Other competitions will follow.

"CIRCUMSTANCES"

I lie in bed—my 'phones are on
To hear the circumstances.
The children's session has begun,
So hang the circumstances!
I love to hear the children sing,
Their voices just like joy-bells ring,
The mirth and laughter that they bring.

To smooth my circumstances.
There's Uncle Tom, who tells the tale,
About some circumstances;
He never lets the hour get stale,
By any circumstances.

He gives us stories—quite a few,
That simply thrill us through and through;

He makes them all appear so true,
Under the circumstances.
There is one more I can't forget,
Under any circumstances.

I have not mentioned her as yet,
She charms the circumstances;
I'm sure you know the one I mean,
She's often heard but never seen;

Oh! Cinderella, Princess, Queen
Of all the circumstances.

So here's good luck to all who try,
At rhyming circumstances.
To dry the tears from every eye,
Whatever the circumstances.

They make us happy when we're sad;
They cheer us up and make us glad;
Such "relatives" we've seldom had,

THE ADVENTURES OF A BLACK CAT

It was midnight as I stole down the stair-way of my mistress's house in the town. I leapt through the open kitchen-window, chuckling as I thought how cook had forgotten to close it. The night was dark and wild, with a few stars faintly striving to show their light, while the moon was like "a ghostly galleon tossed on cloudy seas." I crawled under the backyard gate. There was no one in the street save the night policeman and the yawning lamp-lighter who was returning wearily from his rounds. Now I was free! All fishmongers' stalls were now open to invasion; even the dairies I had so often attempted to raid, and never succeeded, were now my prey. There was no mistress to stop me now!

As soon as the sun was up, I was away at the fishshop, awaiting my prey. The fishmonger was opening the windows when I, from concealment, surveyed my favourite fish. "A nice morning, Mr. Brown," he said to his neighbour, the baker. Now was my chance! I was on the counter in a second; I had captured my fish in another; and in another I was down at the bottom of the street, with the enraged apprentice panting after me.

I was smacking my lips behind a milk-kit at the dairy, observing that there was a pail of delicious, creamy milk within reach. The dairyman was supervising the loading of the milkcart when I, eyes agog with excitement, dodged behind an eggbox to drink the refreshing stuff. "How creamy!" I spluttered. By the time Mr. Jones had come back, I had whisked my tail and disappeared round the corner.

Grrr! I was on the top of a corner-stone, with my back arched, my hairs bristling, and my tail waving, while a biting, yapping, snapping, leaping and bounding cur danced around me. Snap! Scratch! Spit! Snarl!—we went, that disturber of the peace gaining all the time. Round and round we went, leaping, bounding, snapping, spitting, growling, and biting. My breath was coming in short gasps, my proud tail drooping heavily, my ear bleeding, my silky fur ruffled terribly, so I gave up hope and fled, a bedraggled specimen of cat-life. How I longed for my old comfortable home, and the cosy place on the hearthrug, with the fire blazing merrily, and my mistress stroking my fur. But, finding none of these things, I fell asleep.

When I awoke, I found myself in a bright room, with gaily-coloured wallpaper; a fine fire was crackling in a polished grate, and by my side was a saucer of milk. After I had been awake about five minutes, a pretty little girl came into the room. "Poor puss!" she exclaimed, stroking me gently. "We'll take you home when you're better, and you'll be happy." I had lived here about a week when they took me to my old home, the warm hearthrug.

"HOORAYDIO."

(By C.E.).

We're going to have the wireless in our school;

The chaps are all excited as can be

When Splinter Wilson's father puts the masts up,

The joy will send them dippy—all but me.

We're going to learn our singing by the wireless—

The orchestra at 3LO will play—

And most of us will very soon be Brownlees,

Our sisters, Madame Melbas, so they say.

We're going to learn geography and history,

And lots of other things across the air,

We're going to hear the Gov'nor speak at Canberra

The very same as if we all were there.

Our teacher's just about as glad as we are—

He's eager for the other teaching stunts.

He's jolly good, but has the little weakness,

He can't do more than seven things at once.

Some day we're going to see as well as listen

By tuning into station 3LO,

So let us give a whoop for happy schooldays,

Together now, come on, Hooray-dio!

Old New Zealand-The Days Before Discovery

The outstanding success of the celebration of the Treaty of Waitangi directs attention to the past history of the Dominion—even before the advent of man. A series of talks on these lines is being given by the Rev. A. B. Chappell, M.A., from 1YA, and we reproduce here the first talk which is particularly appropriate at this juncture.

THAT New Zealand is old should never be forgotten by those interested in its history, a history full of fascination. This land, though bearing a name suggestive of youth, is one of the oldest in the world. In the remote days when the earth was cooling and crinkles appeared on its hardening surface, there was, it is thought, a vast ridge, broken here and there, of which these little islands remain to tell the tale. Down the Eastern Hemisphere it ran, by way of the Rockies of North America and the Andes of the South, went across the Antarctic region, where its heights yet challenge investigation, came on to endure in these and other islets lifted bolt above the sea, and so continued across to Asia, where the Himalayas rear their towering heads. That is, in part, conjecture, but without doubt, as many geological features show, together with our bird life of very ancient lineage and such rare quadrupeds as the tuatara, these islands are old beyond reckoning.

It is not of any natural "claims of long descent," however, that I am to speak, but of the human happenings that prefaced the life we New Zealanders here lead. These we can trace with considerable precision.

For long centuries New Zealand, far from the birthplace of man, was unknown to him. Its physical changes, wonderfully on beyond his ken. Not written in the remnants of glacial and

volcanic activity, were unobserved. Its clothing with verdure went slowly, until civilisation had passed through ages of varying fortune did he glimpse this land, and what we call its "discovery" was to wait until quite modern times. Of that discovery—when voyagers from far-off Europe lighted upon it, in their bold venturings across the world—we are to think together a fortnight hence.

Visitors From the Pacific.
CENTURIES before Cook came, before Tasman saw New Zealand's southern cliffs lift unexpectedly out of the east, these islands were visited by brown men of the Pacific. These voyagers sprang from the island peoples who had earlier spread eastward from Asia. This Polynesian stock, giving rise to the Maori of New Zealand, was not mankind's earliest representative in the Pacific. There is some authority for the belief that, about the seventh century B.C., Phoenicians settled in these spacious waters. In Easter Island, where the great stone images and an unknown script cut into wood bear witness to a very ancient civilisation touching it once upon a time, a folk traditionally described as "long-eared" were of old in possession. There are legends among many Polynesians of a preceding people, the Manahune, of whom little is recalled beyond their name. In Maori lore is a circumstantial story of the finding here of some earlier inhabitants—non-Polynesian, to judge from the description in the story.

Whatever these things denote—and they cannot be airily dismissed—of New Zealand's Maori occupation we have some sure knowledge. The tale begins in a remote corner of the world. In a land far away to the westward, named Uru, the ancestors of the Maori once dwelt. They migrated eastward to a country called Irihia, a hot country to which legend sometimes confusingly gives the name Hawaiki. Is it unimportant that an old Sanskrit name for India corresponds closely to this ancient Irihia? In that land these ancestors met many tribulations, including constant warring with a primitive black-skinned folk; and eventually they sought a new home, eastward still across the ocean, ever making for the rising sun. So they came to Tawhiti-roa, and afterwards Tawhiti-nui. At length six vessels—great double canoes or single craft fitted with outriggers, steered by reliance on the heavenly bodies—reached the Pacific isles of Ahu, Maui, and Hawaiki.

Great Drift Voyages.

A COMPARATIVELY quiet life followed for a while. Then, increase of numbers and consequent quarrels set many of them afloat again after the manner of their forefathers. Some of these adventurings were drift voyages, daringly risked before the sea-roads of the surrounding Pacific became known; and two of these bold drifts led to the finding of New Zealand. Indeed, there is a tradition of a southward journey, onward from these islands to the region of the Antarctic.

In that region, ever and anon, the descendants of those sea-rovers, unable to return, light large fires to acquaint the Maoris of New Zealand of the fact that they survive and are in need of help. Less imaginative, most of us call these plaintive signals the Aurora Australis.

Great winds, at all events, are known to have brought hither from Hawaiki, in the Society Group, the first Maoris to see this land. One, a westerly sweeping through Melanesia, brought one company directly to the North Island. Another, easterly, brought indirectly the first settlers in the South Island.

It is with the names of Kupe and Ngahue and Toi that these earliest arrivals are particularly associated. The first two, in company, made their landfall near the North Cape. A white overhanging cloud was the first sign of land. "He ao! He ao!" cried one of the voyagers, wife of Kupe ("A cloud! A cloud!"). So New Zealand got its first name, Aotearoa (White Cloud), afterwards lengthened to Ao-tea-roa (the Long White Cloud), as its far-stretching shore lines north and south became known. The islands from which these adventures had come were small in comparison with the land on which they had lighted.

Others Induced to Come.

THEIR explorations led them down the East Coast of the North Island. They camped on the shores of what is now Wellington Harbour—nearly 900 years before Cook found it. Exploration continued—across Cook Strait, into Porirua Harbour, and then down to the West Coast of the South Island. At Arahura greenstone was discovered in the bed of the river—a discovery that was to prove of great importance—and thereabouts they first killed a moa.

They did not stay in New Zealand, returning across 2000 miles of ocean to their old home. But the news they took back was destined to induce others to come and settle. Soon a way known to many was opened between the far-off Society Group and this inviting land. The day of haphazard roving was passing. There was one more drift voyage, however, of consequence. It was that which brought hither the people called, by the Maori, the Maruiwi, after the name of one of this people's chiefs, and later known as the Mouriri. They were not Polynesians. Tall, spare, thin-shanked folk, with their noses and widespread nostrils, and overhanging eyebrows, and some of them with fuzzy hair, they have passed into Maori tradition as a people of low culture, indolent, and treacherous. They cannot have been so mean in attainments as they are customarily described. The evidence points to a relationship to the Melanesian section of the Fijians, and some crafts of non-Polynesian origin among the Maoris doubtless sprang from contact with them.

Two hundred years of this partial Mouriri occupation were followed by the coming of Toi, and then the several organised migrations from Hawaiki. These, which gave origin to the various tribal groups in New Zealand, are the subject of oft-told tales. Their chief points of interest may be left until the story of Maori conflicts comes to be told in this series. Meanwhile, it is well to recall that these islands, so far remote from Europe, but eventually occupied by white men and brown, living together in amity and co-operation, were so long ago first visited by voyagers across the sea. Even in human reckoning, ours is indeed an Old New Zealand.

Radio on the Railway--the Modern Touch

A Glorious Run to Egmont as a Week-End Outing

THE only thing we want now is a radio! That is what the big man with the booming voice and overpowering personality said, as the train ran through the afternoon sunshine on its way to Mount Egmont.

"Well, let's have it," responded a quiet stranger in a grey suit, as he lifted from the floor a neat black box, removed one side, and adjusted it on the top. Then he adjusted the discs, and, consulting his watch to see that 2YA was "on the air," he switched on and there it was! Amazed exclamations on all sides greeted this performance, but there it was in the portable radio in operation. For over an hour the excursionists maintained contact with 2YA, greatly to their delight. The radio fans who were present seized the opportunity to impress others with the lordly luxury of "listening" and its charms, and undoubtedly many converts were made, and this was the latest week-end run of the railways from Wellington to Mount Egmont. It will probably come as news to most to know that on one week-end recently the railways ran excursions from Auckland to the National Kauri Forests of Dargaville, from Invercargill and Dunedin to the Southern Lakes, from Christchurch to the Bealey Glacier, from Wellington to Hawera and Mount Egmont, from Palmerston North and the Wairarapa to Napier, and from the central North Island townships to Wellington and the cool sea breezes of Paekakariki. And each and every one of these specially devised outings exceeded expectations both with the railways and the travellers. Several factors have contributed to this result, for one thing New Zealanders are discovering that they do not know New Zealand. This is a defect which—thanks to radio—is gradually being remedied, and with the spreading of greater knowledge of the Dominion there is born the desire to see. So the railway is stepping in to supply the need, and is doing the job very thoroughly too.

RUN TO MOUNT EGMONT.

Mount Egmont is nearly 250 miles from Wellington, and previously Wellingtonians could only reach this lonely sentinel of the Taranaki Plains by private and individual enterprise, entailing the expenditure of much time and adding up to a rather costly figure even for a visit to this perfect cone which raises its volcanic peak over 8000 feet up—right into the region of everlasting snow. This particular outing could be done at a total cost of not more than £3 to the individual.

And this is how it was accomplished. The railway made it known that the excursion would be undertaken if it could be accomplished cheaply for the passengers, and they set the example by cutting the ordinary fares in half. The hostels and other accommodation places

in Hawera followed suit by reducing their tariffs below the ruling rate for the benefit of the week-end travellers. Then a low charge was decided upon by the motor companies for the conveyance of passengers from Hawera to the mountain, and special arrangements were made at Dawson Falls for providing a hot luncheon at the accommodation house there, for this is the point—over 3000 feet up—at which road traffic terminates. For the convenience of trippers the railway ticket was made to include all transport charges, such as motor rates and mountain toll fees, and the Department also took in hand the arrangement of accommodation for the visit to Hawera.

So convenient were the transport arrangements made that from the time of leaving Wellington at about 1 o'clock on Saturday afternoon to the time of arrival back before midnight on Sunday,

400 miles were travelled by rail, 60 miles by motor, and as much further as the excursionists cared to walk during the five hours spent on the mountain. And this was accomplished without interfering with a good night's rest at Hawera on Saturday, for the train arrived there before 9 p.m., and the next day's motor-ing did not commence until 8 a.m.

On a previous occasion a jazz band was tried out on the train. This time the railway refreshment branch sent a man through with ice-creams, chocolates, soft drinks, fruit, cigarettes, etc.

THE COMMUNITY SPIRIT.

After leaving Aramoho (the junction of the Wanganui branch) the train was joined by Messrs. L. O. Hooker and R. F. Page, representatives of the Citizens' Committee of Hawera. Short addresses were given on the train explaining the arrangements made for the en-

tertainment and assistance of the tourists. Each visitor was supplied with a silk badge as a souvenir of the trip. This was worn for identification purposes and to facilitate the extension of hospitality by members of the Citizens' Committee, who were similarly badged.

The arrival at Hawera was in itself quite an event for a great gathering of citizens was there and a pipe band discoursed sweet music as the train pulled in. Later in the evening a civic reception took place in the King Edward Park, where the Mayor (Mr. P. A. Pacey) gave an address of welcome. Here the Municipal Band was in attendance, a concert on the main lawn was given, the park was specially lighted, and dancing on the green was indulged in.

MORNING ON THE MOUNTAIN.

In the morning very complete arrangements were found to have been

made for conveyance to the mountain. The South Taranaki Automobile Association had generously come to the assistance of the organisers by placing their private cars at the disposal of the excursionists, and Mr. W. G. Walkley, the genial secretary of the association, carried through the work of allotting car accommodation to this record number of visitors. Arriving at Dawson Falls, Mr. C. Gibson, of the South Egmont Park Board, welcomed the visitors, and explained that guides had been arranged to take different sections of the party to the various points of interest. Although the mountain peak itself was veiled in mist, the fresh, invigorating air found at the 8000 feet level encouraged the visitors to move about very freely and enjoy the many wonderful views which this great mountain, with its volcanic soil and sub-tropical, luxurious vegetation, has to offer.

The coolness that comes with elevation sets the mind soaring into a realm of possibility. One bright intellect suggested that the best advance that could be made would be to hoist a wireless outfit up Mount Egmont and send out stirring signals to the universe at large, for it is in such places as this that excessive blood pressures are reduced (as well as the waist-line), and the brain responds with spirit to the eager call for thought.

The return trip found the visitors all entranced with the plethora of good things in the way of sight-seeing and travel that had been provided on this week-end outing, and the arrival in Wellington shortly before midnight terminated what was generally considered to be one of the most enjoyable week-end trips that it would be possible to undertake. Again, on the return journey, the portable wireless played its part between 8.30 and 9.30, and gave a unique touch to the trip.

It is certain that the continuation of such methods for popularising the State transport service will yield good results.

R.F.M., the Siberian short-wave broadcast station, has proved almost as elusive as the Pimpernel of late. He is on a different wavelength every night, and one has to comb the ether to find him. Maybe he's searching for the most satisfactory wavelength.



Impressive group of week-enders who visited Mt. Egmont on the occasion of the Railway Department's special excursion recently.

—Publicity Department photo.

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