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Gigantic Music Library of the B.B.C.

IN an interesting series of articles in the "Radio Times" some interesting "behind the scenes" glimpses are being given of the ramifications of the modern broadcasting studio. Perhaps one of the most illuminating ways of focussing the minds of listeners on the tremendous problem of providing a constantly varying programme, is the description of the huge storehouse of music now provided by the B.B.C. for the needs of its stations. The same need has been felt in New Zealand, and very early in its career the Radio Broadcasting Company instituted a music library, which has now attained no inconsiderable dimensions.

THE series of promenade concerts and operas broadcast by the B.B.C., not to speak of the recent controversy on jazz in these columns, and the large proportion of the programmes covered daily by all kinds of music, combine to offer overwhelming evidence of the importance of the musical side of the activities of Savoy Hill. And the foundation on which the success of the activities is based is the music library.

This library, with a small staff of nine, and a fascinatingly mysterious suite of small rooms, is not the largest of its kind in the world—as yet. Though that will undoubtedly come if the development of radio continues at anything approaching its present rate. When you hear that it began on the top floor of Marconi House in the first days of the British Broadcasting Company in December, 1922, with a stock of from 150-200 orchestral items, and that in six years this section has grown so that its main library of stock pieces, which are not repeated in any form, now consists of 8,500 items, you get a vague idea of its increase both in size and importance. And when you hear, further, that its head is directly responsible in particular for supplying

music required for London and 5GB programmes from the London studio, and that the average night's programme contains anything from 200-400 separate "parts," you begin to get an idea of the magnitude and complexity of his task.

The music library, by the way, contains no dance music. That much-debated branch is the responsibility of the B.B.C. Dance Band alone. By far the greatest stock in the library—as much as 75 per cent.—is orchestral music. But in addition to the main library there are, as it were, several sub-libraries.

First there is a duplicate library of some four thousand orchestral items, and a triplicate library of perhaps a thousand. For the music library at Savoy Hill is the source of supply for music at all stations. A great part of its job consists, in this supply service, in checking the issue and return of items so supplied, and in repairing the naturally considerable wear and tear which result from the journeyings of its music all over the Kingdom. And in this connection perhaps it is interesting to realise that many musical works cannot be bought and kept in stock, owing to copyright reasons, and have to be hired from the copyright owners. Operas and operatic arias are notable examples in this category.

Then in addition to the main, the duplicate, and triplicate libraries, there are

other important collections of music. Along the walls of the department there are kept at least a thousand numbers for the use of the ever-popular military band; about fifteen hundred anthems, glees, part-songs and so forth; and no fewer than fifteen thousand copies of vocal scores, oratorios, song-cycles, operettas, and musical comedies.

Finally, in considering the contents of the library in bulk, it must be remembered that every full score or conductor's part in the main library is repeated for the use of the Balance and Control Department at Savoy Hill, and for all reference purposes.

After such a ponderous collection of statistics and routine activities you might be excused for imagining the musical library to be a place of dust and hard-faced men. It is neither. It has an atmosphere of distinct gaiety, and, if its head is to be believed, it even has its funny side. To this it is indebted principally to the enthusiastic small boys who appear in a state of panting excitement with urgent demands for certain music in a hurry, which results in their zeal outrunning their pronunciation. A demand for the "Christmas Oratorio" was fairly easily realised to refer less to Hamlet than to an oratorio, whereas a good deal of explanation was needed to "clear the air" when, after being told that trumpet parts were "tacet," the messenger said he'd take two of 'em! But it took a cross-word puzzle enthusiast some time to find "Cathedral psalters" as the proper rendering of "Cathedral plasters"!

A Nicht wi' Bobbie Burns

All Stations on January 25



PROGRAMMES in celebration of Robert Burns will be broadcast on Friday evening, January 25. Typically Scottish they will be, and composed of the works of the famous ploughman poet, but they will make an appeal to all and not only to people whose ancestors hailed from the land north of the Tweed. To Scotsmen, Robert Burns is immortal, but he plays no small part in the life of the whole British people. Poems composed by Burns are held dear by all, and in songs such as "Auld Lang Syne" the English and the Irish join as lustily as the Scots, laugh as heartily over "The Deil's Awa," are thrilled by "Scots Wha Hae," and are touched by the pathos of his tender love poems. Who does not appreciate the sentiment expressed in "John Anderson, My Jo," the "Address to the Deil," the story of "The Twa Dogs," the address to a field mouse whose home he had overturned when ploughing, or "Tam O'Shanter."

ON January 25, 170 years will have come and gone since the young wife of a working gardener gave birth to her first child in an "auld clay biggin" near the town of Ayr. Nature afforded a cold and tempestuous welcome to the infant boy, and his life's journey of thirty-seven years was beset with troubles. His wanderings hardly extended beyond the confines of his native land. He strove with unfruitful soil and "searched old wives barrels" and left behind him only a little more of material possession than he brought. Now, the glory of his name is spread as wide as the world, and no son of Scotland has homage in comparison. As Sir James Barrie once said, "They have all to take the kerb for the exciseman."

On every anniversary of Robert Burns' birth countless thousands of his lovers throughout the world keep a

tryst with him. He is admitted by the highest authorities to have been the first poetic genius of the eighteenth century, but his countrymen do not base their devotion on literary attainments alone. It is the place he has in their hearts by which they judge him.

AS a growing boy he had a man's task, and the ploughman's stoop was fashioned which went with him all his life. He says himself that there was the "cheerless gloom of the hermit with the unceasing moil of a galley slave," but though his youth was hard and anxious it was a necessary prelude to his message.

THE shadow of poverty hung over his father's door, but he was brought up in surroundings of almost unrivalled natural charm, and his young heart was early stirred by the magic beauty of the world. He did not get more than three years' schooling, snatched at random from the times he could be spared from the labours of the field, but the impression which still persists that he was an unlettered peasant is entirely erroneous. He was extraordinarily well-informed, thanks to his father's efforts and his own intense desire for knowledge. He only lacked opportunity to acquire an advanced culture. In such a process he might have been robbed of the gay spontaneity which is his chief charm. One cannot, somehow or other, imagine him walking on academic stilts along the highway of life.

*Give me a spark o' nature's fire,
That's a' the learning I desire.
Then though I drudge through dub and mire,
At plough or cart
My muse though hamely in attire
May touch the heart.*

A succession of unsuccessful farming ventures—a brief period in which he was feted and lionised at Edinburgh, which was then one of the leading social and literary centres in Europe—three and a-half years in Nithsdale, where he tried without avail to combine the dual role of farmer and exciseman—and four and a-half years in Dumfries, where he wrote songs of incomparable beauty, and served the Excise Board for £70 a year, is the story of his life.

IT has been the fashion to look upon it as a tragedy. Biographers and essayists have almost without exception mourned over him, but it is not improbable that the only tragedy was the supreme final one when death claimed him so early in his days. It is fortunate for us, says Mr. Joseph Hunter, in a recent British magazine, that he is his own best biographer. Bookish and unworldly men have failed to grasp the essential fact that he was a perfectly normal person with all the eccentricities of conduct and flaws of temperament which distinguish our kind, and that his divine gifts, so lavishly displayed, must not be the medium through which is exacted from him a standard of conduct above that of ordinary men. It was not altogether easy for a literary artist of the first order, who knew always how to think, but not always how to live, to accommodate himself to the discreet atmosphere of a country town in time of extreme political dissension. It is indeed a matter for wonder that in his lifetime he created so great a stir as he did, and Nathaniel Hawthorne is right in saying that "It is far easier to know and honour a poet when his fame has taken shape in the spotlessness of marble than when the actual man comes staggering before you, besmeared with the stains of his daily life."

It is by the glorious heritage which he has left us that we must judge Burns. When he came, literary taste was artificial, and effeminate, and poor, storm-racked Scotland was in peril of losing the individuality of her national utterance.

WITH a wave of the magician's wand, he changed it all. What had seemed vulgar and commonplace before, because it belonged to the everyday life, of thought, and speech,

and action, became transfigured, and appeared in the true beauty of its natural proportion by the touch of his genius. He is the most natural of poets, as he was the most natural of men. He speaks in the language of everyday life. No training in the schools is required to follow every line of his thought. He dignifies labour. He ennobles honest poverty. He clothes the thoughts of the humblest in the most beautiful raiment. His songs will remain his greatest source of power. They are tender as the early blossom and fragrant as the full-blown flower. Laughter ripples over their surface, and tears bedew them." A thousand years are in their substance. They are the emblems of a nation's soul. The late Professor Nichol compresses the much that may be said of these songs into these striking words: "There is the vehemence of battle—the wail of woe—the march of veterans—"red wat shod"—the smiles of greeting—the tears of parting friends—the gurgle of brown burns—the roar of the wind through the pines—the rustle of the barley rigs. All Scotland is in his verse."

The Picnic Season

ALTHOUGH the picnic season is yet in full swing a large number of applications for special services have already been received at the various railway offices. The popularity of the "picnic train" is doubtless due to the low fares charged for both large and small parties, together with the special facilities provided for the conveniences of picnickers. An attractive booklet published by the Railway Department and widely distributed through New Zealand recently, contains useful information relative to the location of, and facilities available, at the principal grounds in the Dominion. A comprehensive mileage table is a feature of the publication and the fare to any desired ground can be readily ascertained by reference to the fare table.

It is interesting to note that approximately 300 trains of ten carriages each would be required to accommodate the 172,336 picnickers carried by rail last year.

Copies of booklet are obtainable at all railway stations.

Fares Cut for Summer-time Picnic Trips

Again this year the Railways offer substantial reductions in fares for large or small picnic parties.

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B Class Stations --- Pros and Cons

Are they Justified?

A correspondent last week expressed appreciation of our article, "Ready to Raid Listeners' Funds," in which we disclosed the plans of owners of "B" class stations to endeavour to secure subsidy from the Government or listeners for their stations. That correspondent said: "Your article is timely, and, to my mind, puts the case very fairly, and I believe you will receive the backing of all unprejudiced listeners."

This week a correspondent takes the opposite point of view, and considers our article "unsportsmanlike." In pursuance of our policy of affording the fullest opportunity for frank discussion of this question, we are publishing this correspondent's letter below, and make such comment on the arguments as we think is desirable. In our view it will be advantageous for listeners to have a full appreciation of the factors involved in the proposed agitation for "B" class stations being subsidised from funds provided by listeners for the broadcast service.

We also publish an important letter from another "B" station owner suggesting a new method for the development of such stations, without subsidy, in the present or future, from listeners' funds. We deal with this letter editorially.

I wonder what New Zealand would say if all the public services closed down on Christmas afternoon? I may say I have no interest whatever in any Z station, beyond the pleasure they afford me, at present gratuitously, and I don't see why they should not receive a small modicum of the increasing licenses, as an earnest of listeners' appreciation, and the radio clubs should be treated the same, as they, unlike sports clubs, are providing others with entertainment. Be a sport and let the Z stations live peacefully until they actually tread on Y's corns.

I would like to congratulate 4YA on their Christmas night entertainment, as being the best of the four stations, and also 2YA on their excellent dance programme on Boxing night, better than relays from noisy cabarets.—G. S. PAXTON (Dunedin).

IN our view our correspondent does not display a full and proper grip of the subject he discusses. Nor has he been perfectly fair to ourselves in traversing our article. For instance, he says, "Yet you suggest selling time to the proprietors of the Z stations by the R.B.C. to advertise their wares." That statement is not correct. What we said was, "The objective of furthering radio would have been attained more completely by co-operation than by competition. It was open, and still is open, to the owners of these B class stations, seeking publicity and the furtherance of radio, to purchase time from the Radio Broadcasting Company, and invest their money in longer hours of operation and—if they have the talent available—better programmes than have been given. Such programmes could be sponsored by the firm concerned, and full credit given them for their enterprise and initiative." This passage shows, we think, that it was not our thought that the time purchased should be devoted to advertising, but to the provision of those "better programmes" which it was suggested the B class stations could give.

Our correspondent further suggests that "Buying Y stations' time would be more expensive than running their own plant." This strikes us as rather a foolish suggestion, as no basis of purchase has been suggested nor a quotation asked. To a business mind it would seem extremely unlikely that the

purchase of part time from an existing organisation would be dearer than the establishment of an entirely new plant, with all the expenses of capital outlay, rent, etc., apart from actual operation. Having regard to the value of split overhead, a business mind would not support our correspondent's suggestion. The suggestion that the Z stations do not need bigger audiences is also, to our mind, somewhat feeble, seeing that the very purpose of their existence is publicity, and "the bigger the better" must surely be their motto.

We have no objection whatsoever to being a "sport" and letting the Z stations live peacefully on their present basis, as suggested by our correspondent. The trouble, however, was that they were not content to remain on their present basis. They promulgated a suggestion for raiding listeners' funds or seeking a subsidy for a service voluntarily entered upon by themselves for their own special purposes. This proposal to our mind involved the welfare of radio itself, as the splitting of the funds for broadcasting to give each of these small stations, as suggested by our correspondent, "a modicum," would simply lead to diffusion of effort and inefficiency. Experience elsewhere is definitely against the superfluous stations. A listener can enjoy one only at a time. If longer hours of transmission are desired, that end is more likely to be gained satisfactorily by conversation of the funds available, than by diffusion of those funds in duplicating plant and equipment.

A sounder view of the position regarding B stations is advanced by Mr. W. A. Sunderland, of Port Chalmers, who writes:—

"About the B stations, there are some who broadcast to improve their radio trade; there are some who do it for the love of it, but I have not yet heard of anyone asking them to broadcast. It is either for business improvement or for the love of it, and when either party is not satisfied I should say the simplest way out is to go off the air and not try and unload it on the listeners-in, or the Broadcasting Company of New Zealand. I should think the Broadcasting Company can spend all the license fees for keeping up their stations and paying their very fine artists. So the simplest way out for the B stations, I should think, is for them to go off the air when they are not satisfied, and not try and unload on either the Broadcasting Company or the listeners-in."

Some Other Factors

WILL you please allow me a little space in which to reply to a letter by J.L. (Hastings) in the "Radio Record" of January 4. In the first place I would like to have seen J.L. sign his full name under a letter like that. In the second, it is quite evident that your correspondent is not the proud possessor of too efficient a receiving outfit; if he was, he would certainly not have criticised the Radio Broadcasting Company to the extent which he did. J.L. states that "Aussies" are inaudible and therein, I claim, lie heaps of reasons for criticising his outfit, and if J.L. does not possess a very efficient set how can he reasonably claim the privilege of pulling the present broadcasting service to pieces. As for getting mostly mush, fading and distortion, well, this statement is absolute rot and leaves J.L. open to considerable personal criticism in consequence. I am running a 6-valve set with one of the latest moving coil speakers and it strikes me very forcibly that it would do J.L.'s heart good to hear this outfit and to realise just what real pleasure can be got out of the present service. In regard to subsidising the B class stations, it seems to me that if any payment is made to one it must be made to the lot and what is paid to them cannot be spent on improving the present service given by the YA stations. And who in Hades, in my district, anyway, is willing to sanction a portion of their license fee

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Musical Intelligence
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OUR article "Ready to Raid Listeners' Funds" in December 21st's issue is surely rather unsportsmanlike, and I firmly believe the majority of readers will have disapproved of its sentiments.

Ever since the inauguration of Z stations, listeners have questioned why they received no subsidy out of license money, because they provided extra entertainment when Y stations were not on the air. Now that they are well-established, and giving reliable service, why should they not form an association among themselves, without you endeavouring to blast them in listeners' minds? I venture to say that these Z stations have been beneficial to the R.B.C.'s finances, in that they have largely helped to increase the number of licenses issued, for it is they who have been on the air during the shops' best radio-selling hours (12-2 p.m.), when the Y stations have almost totally been silent.

You say radio advertising is contrary to the spirit of the regulations, and would be foreign to listeners, yet you suggest selling time to the proprietors of the Z stations by the R.B.C. to advertise their wares, which they do not at present any more than the Y stations, who also acknowledge the loan of records by So-and-So. Moreover, I venture to say buying Y stations' time would be more expensive than running their own plant. They don't need bigger audiences by virtue of the greater power of the Y stations; people buy in their nearest home town; no Aucklanders would send to Dunedin for a good record he heard from there, he would procure it in Auckland. And besides, surely the Z stations get big enough audiences? We hear all of them in Dunedin, so I suppose they can all be heard in Auckland too.

You point to Australian conditions of over-crowded ether not being desired in New Zealand, and you endeavour to frighten crystal owners at least that if the Z stations are over-subsidised out of licenses that there will be such a jumble of jarring jingles in their sets that listening-in will be an abomination instead of a delight. Z stations are not on the air during Y hours so far as I know. Certainly the Z stations will be well advised not to ask to be on the air, more than one at once in one centre, as their wavelengths are close.

The Z stations, in my opinion, give licensees extra value, and are to be encouraged along present lines rather than being swallowed up into a monopoly, or starved out of existence.

A vivid case in point occurred on Christmas afternoon. It was dull, wet and blowy, unenticing to go outside the house, and one turned to radio to provide an interest. Dialed 1, 2, 3, 4 Y station in turns, all closed down. Luck was in after all, 4ZM on the air with an extra good selection of gramophone records, and 3ZC with a special session for hospitals—carols and an inspiring and heartening message for both infirm and well by some gentleman. I was so absorbed by these two stations that I didn't dial on to the 1 and 2 Z's, but probably they, too, were on the air, unselfishly foregoing their Christmas relaxation for listeners' pleasure.

being paid away for something they are not receiving, for this is what it would mean if a portion of the license fees were set aside for the benefit of the B class stations. Some of these stations certainly render splendid service in their immediate districts, but of what real use are they to the great number of listeners in Wellington and Marlborough for instance. A lot of listeners hear these stations very often in these districts, but how many hours per week of almost perfect reception can they lay claim to hearing.

I have heard 2ZM, 2ZE, and 4ZL equally as good as 1YA and 3YA, but how often will this occur? When the former stations come through good it follows that YA stations are not out of the picture altogether, and who is going to listen to records all the evening when they have a receiver capable of picking up and reproducing many of the very fine items put over by the YA stations? Again can it be stated that the effective range of the B class stations in any way compares favourably with the YA stations? Not one line of this letter is intended to belittle the activities of the B stations, but to get at the bottom of the whole question, and to do this I consider that it is necessary to draw as complete a comparison as possible between the two classes of stations, and not to beat about the bush but bring out everything that has a bearing on the subject. In this way only can the matter be settled amicably to all parties.—N. C. WINSTANLEY (Picton).

B Stations Supported by Advertising.

IN recent issues of your journal you have given generous publicity to the matter of B class stations, and in your issue of January 4 state that you are quite prepared to give full publicity to capably-expressed views on the question from whatever angle they be advocated. In these circumstances you will therefore probably find space to permit the views of station 3ZC, Christchurch, to be placed before your readers.

Before coming down to hard facts may we state that we are quite in accord with the majority of the opinions expressed by you. We are in complete agreement with you when you state that "a service satisfactory to listeners and the public in general can be provided only by central control, and adequate organisation and administration of the funds available." Further, "that system would not prove possible by the provision of isolated, independent, and scattered 'B' class stations nibbling at the stability of the central fund through demands for subsidies."

We believe that the letter sent out by the Dunedin independent stations was a mistake and have already expressed the opinion to the authors of this letter that they had tackled the problem from the wrong angle.

We are strongly in favour of an independent broadcasting service in the Dominion—but not if this involves any question of subsidy from the Government, or the allocation of any portion of the fees paid by listeners.

To quote your own words: "There is only one way to view this question, and that is from the broad view of the best interests of the radio service and those primarily concerned, the listeners themselves." We agree with you that "if a beginning is made with subsidising, then there is no saying where it is going to end. The end simply would be diffusion without efficiency."

It is with a full realisation of this fact that in all our requests to the Government to permit us to earn sufficient revenue to pay the overhead expenses of our station we have stated emphatically that neither now nor in the future do we ask, or will we ask, for any financial assistance, direct or indirect, either by way of subsidy or by the allocation to us of any portion of the license fees payable by listeners.

Having made our views on this matter quite clear, may we be permitted to state as briefly as possible why we believe independent broadcasting will be "in the best interests of the radio service and those primarily concerned, the listeners themselves."

In the first place, the question has to be considered as to what is the function of radio broadcasting in the community. In your article "Ready to Raid the Listeners' Funds" you refer to "a certain number of listeners who desire entertainment only to be provided during entertainment hours." This implies that broadcasting is a means of entertainment. Accepting this assumption as the viewpoint of the Radio Broadcasting Company, it must be agreed that the company is grappling with one of the most difficult tasks in the world—the satisfying of all tastes at one and the same time. [We expressed our views, but that expression of view is not binding on the Radio Broadcasting Company. Our correspondent must not seek to identify two different organisations.—Ed.] It is here that an independent service would materially assist the company. So long as only one service is available to listeners so long must the nature of that service be restricted. Possibly an appropriate analogy would be that of the

professional entertainment world. In each of the main centres in the Dominion there are numerous picture theatres, a vaudeville theatre, and a theatre utilised by visiting companies. In each of these different theatres programmes of an entirely different nature are presented nightly, the respective managements knowing full well that from an entertainment point of view "variety is the spice of life." And yet, in spite of the ample provision made for the entertainment of theatregoers there are, in addition, choral societies, orchestral societies, amateur operatic societies, organ recitals, "little theatres," and other forms of entertainment, proving that there is a need for independent enterprise of all sections of the community are to be catered for. Independent broadcasting may be likened to these private providers of what may be termed "special" forms of entertainment.

One could write at great length in support of this argument, but your space is too valuable for a lengthy dissertation on this viewpoint.

Summed up, however, we may state that from our viewpoint there should be no conflict whatever between the YA stations and independent B class stations. The one should be the complement of the other.

As an instance may we point out what happens at present on Saturdays and Sundays. On Saturday afternoons listeners who are not interested in sport are debarred from the pleasures of their sets, as there is no alternative from the relays of sporting fixtures. On Sunday evenings a listener must, willy-nilly, listen to a church service till after 8 p.m., or else leave the set out of action. With an efficient independent service there would be a choice of programmes on both these occasions.

Similarly during the hours when the YA stations are at present silent. With a properly organised and controlled independent service there is no reason why radio service should not be available from early morning till midnight every day in the week.

You will note that we use the terms "properly organised and controlled" when referring to B grade stations, and in this connection we would point out that our proposals, placed before the Government, provide for a central board of control to control all B grade stations, such board to consist of one member appointed by the Government, one member by B grade licensees, one member by the New Zealand Broadcasting Company, Ltd., one member by the radio traders of the Dominion, and one member by listeners. We have suggested, further, that the number of B grade stations to whom licenses may be issued shall be determined by the board of control, who shall decide whether the interests of listeners will be served by the establishment of such stations.

The most important provision, from the Broadcasting Company's point of view, in our proposal to the Government is that no claim whatsoever shall be made by any B grade stations for any portion of the licence fees collected by the Government from listeners.

As regards the revenue necessary to maintain an efficient B grade service in the Dominion we cannot see what objection there can possibly be to a strictly controlled, and limited, period of publicity on the air from B grade stations.

Your comments in this connection rather discountenance radio publicity,

but you nullify the effect of your remarks by publishing an article from the London "Radio Times," by Mr. A. J. Preston, which makes it quite clear that "radio advertising, like newspaper advertising, has increased greatly in subtlety. The old days of 'Buy more so and so' are past. An advertiser sponsoring a programme realises that to try the patience of the listener with continuous eulogistic description of his commodity would be to imperil the good-will built up by such heavy expenditure. He cannot risk offending his prospective customer or driving him to seek refuge on some other of the many available wave-lengths. To-day he is content, in most cases, with a simple announcement at the beginning and end of the programme that 'this concert is provided by the makers'—so and so."

And now for a brief criticism of your own published statements. In the first place we must join issue with you when you quote Australia as "a very good object lesson." You state, "The tendency there now is, after experiencing the blessings (?) of a multiplicity of stations, to concentrate and reduce their number. Hence we have seen the amalgamation between 2FC and 2BL, and between 3LO and 3AR. The object of these concentrations was greater efficiency for the listener." You omitted to state, however, that these amalgamations did not reduce the number of stations, but were effected solely to prevent duplications. For instance, in Sydney on Saturday afternoons it was the custom of 2BL and 2FC each to broadcast the races, so that listeners would either have to listen to race descriptions or cut off. Now, while one station is describing the races the other is giving a musical programme, and a majority of the listeners appreciate the change. In various other ways the stations co-operate, but the Department still maintains that the programmes are not of sufficient variety or merit.

The Acting-Director of Postal Services in New South Wales (Mr. Haldane) stated recently (vide Christchurch "Press," June 19, 1928): "It must be remembered by listeners that the Department is not bound in any way to the existing A class broadcasting stations. If it is practicable for any other companies or organisations to give a better service to listeners, the Department will be glad to hear from them."

So much for Australia, where, incidentally, B grade stations have been operating for years past and are still increasing in number and in their activities. There has been no reduction in the number of Australian stations; on the contrary, they have increased during recent months.

In conclusion we would again stress the fact that we can see no possible reason why an efficient independent service should not be developed in the Dominion to supplement the present broadcasting service. If this is effected we are confident that it will be not only to the advantage of listeners generally, but also will materially assist the revenue of the Broadcasting Company of New Zealand.—L. E. STRACHAN, Station Director, 3ZC (Christchurch).

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Radio Round the World

RADIO is ever being applied to new and practical fields, and among these now is to be found a radio insect exterminator. The new apparatus, designed and operated in America to conquer the pest that has been responsible for the destruction of tremendous potential wealth, accomplishes its work by electrocuting the pests. The electrical equipment resembles the now obsolete spark radio transmitter. The network of wires spread through the apple orchard somewhat resembles the aerial equipment of a transmitting station. The electrical charges leave the plant by way of vertical wires suspended from this network. This current serves a dual purpose in that in electrocuting the pests it acts as a tonic to the trees.

READERS of the Australian radio magazine "Radio in Australia and New Zealand," will regret to learn that from last month this valuable magazine has ceased to exist as a separate publication. It has been incorporated with "Wireless Weekly," an Australian magazine, which has been especially enlarged and brightened. The technical staff of "Radio" are transferring to the weekly, so that readers can be assured that much of the character of the former magazine will be retained. The weekly is a paper much after the style of the "Record," publishing as it does the programmes and programme features, constructional articles, world news, and a query column, while "Radio" was a more or less technical journal.

RADIO is fast paying the way to safer aerial navigation, and it is authoritatively stated that but for the wireless equipment carried by the Graf Zeppelin in her trans-Atlantic flight, that venture would not have been a success. The chief function of radio on this trip was the gathering of weather information by which the course of the Zeppelin was directed. During the whole of the trip the transmitting apparatus was not idle, but was working at high speed. Important Press and private messages were relayed, while the short-wave apparatus intended for communication with amateurs was not used. The operators had to work at high speed to deal with the more important weather messages in which the fate of the vessel depended. Many ships tried to establish two-way communication, but unless their messages were of paramount importance they were not successful. In order to discourage private messages four times the ordinary rate was charged.

DURING recent weeks an experiment has been tried in Australia to broadcast one programme from two stations at the same time. The dance programme from 3LO has been sent over the line to Adelaide and rebroadcast by 5CL. The results were so satisfactory that more regular arrangements will be made, and thus the advantages of chain broadcasting will be realised. It will be a departure for Australia, but it is not a new idea in other countries. Under the new arrangements good dance music will be

given at a minimum of cost and effort. There will be only one controlling management for the different stations. There has been a difficulty in Australia to supply good service to many distant listeners, who have had to rely on the

I would have others do unto me. "Refrain from judging others." "Keep smiling." "Try to make others smile." "Be nice and attractive to other people." In addition, members are asked to try and be of service in many other ways,

UNIQUE in the history of broadcasting were the special prayers conducted by the Archbishop of Melbourne at the studio of 3LO each evening during the critical illness of His Majesty the King. Never before has a broadcasting station been called upon for such an urgent and earnest purpose, and the playing of the National Anthem by the 3LO Orchestra, at the request of the Archbishop, and the prayers offered by him, caused a profound impression with hundreds of thousands of listeners scattered all over Australia, who devoutly and silently joined with him in his earnest and solemn efforts.

local station to provide entertainment. In some cases this has not been of a very high standard, and so the new system is arranged to cope with the position.

KONIGSWUSTERHAUSEN (Germany) made its first experimental transmissions of pictures on the Fulton system on Tuesday, November 20, from 9.45 to 10.15 p.m., G.M.T. Subsequent transmissions of pictures from the Deutschlandsender are being made.

ON October 22 there was opened what is said to be the most powerful radio broadcasting station in the Empire, Britain excepted. It is in South Africa, on the highest point of the Witwatersrand, a mere 6000 feet up. It is intended to minister unto the Union of Rhodesia.

WIRELESS telephony is developing.

The British Post Office service to America is an accepted fact. A service between Buenos Aires and Berlin will be opened soon, and tests between Buenos Aires and Paris are in progress. Picture radio telegraphy tests between Buenos Aires and Berlin are also being made. It will be possible before long for the public in England to sit at home and put through a telephone call to most important capitals of the world.

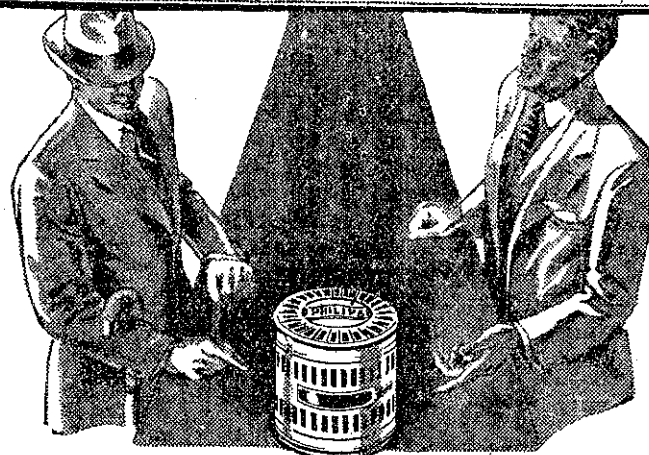
SALES returns of wireless receivers among both wholesale and retail dealers, in Toronto, show a marked increase this year over last. It is significant, too, that from 90 to 95 per cent. of the sets sold are electrically operated, and traders find the widespread desire to exchange the old type of receivers for electrically operated ones something of a problem. Cheap sets are no longer sought, and the prices of receivers most in demand range from £45 to £60.

AN excellent idea has been formulated by Mr. F. Grose, the Boys' Work Director of the Y.M.C.A., Australia, in conjunction with the New South Wales Broadcasting Company. Mr. Grose, in putting over the air a series of talks on "Happiness," formed a "Cheer Up" Club, with the distinguishing badge of the Blue Bird. A code of rules has been drawn up, excerpts of which are "Do unto others as

be very popular amongst listeners. There is no age limit, so that it will be difficult to estimate the extent of the influence of the society.

THE Canadian Director of Radio has been informed by the Commissioner of the Federal Radio Commission, that under the new allocation system, which went into effect November 11, "no station in the United States on a channel shared with Canada exceeds 500 watts power," and that "no station within approximately 250 miles of the border is using more than 250 watts." On United States-shared channels the Commissioner advised that the Commission has established a policy of granting three times the night power for use during daytime until sundown.

IN anticipation of a regular trans-Atlantic aircraft service, a short-wave wireless telephony transmitter has been installed at Hamburg with the call sign AEM. The plant is sufficiently powerful to assure a transmission of approximately three thousand miles during daylight and over five thousand miles at night.



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"YES, Sir, it's wonderful the number of people who snap the power switch to their Battery Charger and feel that all is well only to find one day that their accumulator is flat and practically ruined, and all this owing to a fault in the charger. It is to them that half our accumulator sales are made.

"No, it can't happen to this charger for it's a Philips 'Four-Fifty.' When the accumulator's connected up and the power is snapped on, a 'Blue Glow' is visible through the ventilating ports, meaning that everything's quite O.K.

"There's lots of other interesting things about the 'Four-Fifty.' Sir, including its dual rates, and if you write to Philips Technical Department they'll send you the fullest information, and give you advice on any point that you would like cleared up.

"But you'll have it now. Yes, it's complete with plugs and cords.

"Wait a minute, please, there's some change to come. You see, it's only 85/-."

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The New Zealand Radio Record

P.O. BOX, 1032, WELLINGTON.

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N.Z. RADIO PUBLISHING CO., LTD.,
P.O. Box 1032, WELLINGTON.

WELLINGTON, FRIDAY, JANUARY 18, 1929.

WILL B CLASS STATIONS HELP RADIO ECONOMICALLY?

IN another column we publish a number of letters on the question of the establishment of "B" class stations, to be assisted by subsidy from the funds provided by listeners. Views both pro and con are expressed, and may be left to speak for themselves. In addition, we publish a letter from Mr. L. E. Strachan, director of 3ZC, urging the special scheme he has advanced for the development of an independent B station service. This is conceived on an entirely different foundation from that advanced by his Dunedin confreres. Mr. Strachan completely and emphatically repudiates the idea of ever, either now or in the future, asking for subsidy from the Government or listeners, but proposes that such B stations as may be approved by a special board to be established shall be allowed to operate on the revenue to be secured from the sale of publicity. This is a proposal, in effect, that the American system shall be grafted on to our own unified system, which is based upon that of Britain. The question is, would the two systems operate effectively and efficiently side by side, and be to the advantage of radio and the benefit of listeners?

WE do not think they would, and in fairness will advance reasons for our belief. Mr. Strachan's scheme is free of the objection that it would make direct inroads upon the central fund provided by listeners. It would, however, immediately intensify the costliness of the present service by creating competition for artistic talent, as on the indication given, to secure an audience for the entertainment to be given by grace of Messrs. So-and-So money would necessarily be spent freely for the best talent procurable. Artists naturally would welcome such competition, but obviously listeners' funds would not go so far. Further, Mr. Strachan would seem to recognise that if this extra right of selling time is given to one it must be given to another, for he proposes a board to adjudicate on the applications to be made. Such a board would be open to pressure, and would find it hard to refuse to one what it had granted to another. The tendency, therefore, would be for more and more to enter the field to compete for the limited revenue available, and thus clutter up the ether to the disadvantage of listeners. These points are made regardless of the fact that the right of selling time is not negotiable as it is included

in the existing contract of the Radio Broadcasting Company, and obviously the Government cannot sell the same thing twice

WE are, however, quite prepared to discuss the theoretical case on its merits. For B class stations to be effective as revenue-earners they must be situated in the centres of population in order to reach the largest possible audiences with their clients' announcements. They must also be able to operate at the popular hours in order to secure their audience. For these two reasons, therefore, they will necessarily be placed in the four centres, and operate at the same hours in the main as the YA stations. This will certainly give listeners with selective sets a range of choice, but would impose difficulties upon the owners of non-selective crystal sets. We imagine that in spite of what Mr. Strachan says overseas experience is available which will definitely discount his case. The Chief Telegraph Engineer (Mr. A. Gibbs) returned comparatively recently from an important tour of the world, on which he collected much data of value. It is significant to our mind that, although permission for a certain independent station in Auckland had been given by the Department before his return, erection has not been undertaken. We venture the view that it was because of the lessons acquired from overseas experience; and the same lessons will operate in regard to further proposed stations of a competitive nature.

ANOTHER factor of a rather far-reaching nature is involved in the question of exploiting the air for advertising purposes. That is, competition with existing advertising mediums, such as the daily Press. In New Zealand the daily Press is highly organised, very efficiently conducted, and renders a very valuable public service. It derives much of its revenue from the sale of advertising space. If the daily Press found radio an active competitor for advertising revenue, its attitude to radio would certainly become less tolerant than it is. Radio benefits greatly by the liberal manner in which the Press informs its readers of forthcoming programmes. No sum within the capacity of listeners to pay would compensate for that service. The success of any station selling publicity on the air would be largely determined by its capacity to give a large public prior knowledge of forthcoming programmes. We do not imagine the Press would welcome a system which could be successful only at the expense of its own advertising revenue.

SO far we have looked at this question apart from the immediate angle of the listener? How will he benefit by extra stations in areas already fairly well served? Those already enjoying a wireless service will certainly benefit by a capacity to select (provided their sets are selective); they will suffer if their sets are not selective. The big problem of radio in New Zealand is left unsolved by this proposal to establish B class stations dependent for revenue on the sale of time. That major problem is the extension of effective radio reception over new areas of population; not the duplication of stations and services already existent. Would radio not be advanced better by extension than by intensification? We think it would.

A BETTER radio service can be given in two ways—(1) By longer hours of operation of existing stations, and (2) by satisfactory points for relay to reach new centres of population. Both problems in our view will be most effectively handled by concentration on the expansion of the existing central organisation. More revenue will permit longer hours of operation; more revenue will permit the provision of relay points for more people. If the present rate of progress is not satisfactory, would it be desirable for the Broadcasting Company, with the Department's permission, to make effective its existing right of selling time for advertising purposes and with the revenue thus secured expand the present service? Frankly, keen as we are to see radio progress, the number of listeners expand and dealers prosper, we would be reluctant to see a vigorous development of commercialism in our entertainment programmes. The revenue so secured would, we feel, be dearly bought for reasons indicated in this article. It is natural for rapid expansion to be desired. It is, however, wiser, we think, for all expansion made to be won solidly and effectively and without possible reactions to the detriment of radio. For these reasons we do not think it would be economically sound either now, or in the future, for radio to rely for development upon the scheme advanced by Mr. Strachan.

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greater volume.

The Press and Radio

Trend in America

IN our editorial article, in discussing the proposal that B class stations relying on advertising revenue should be allowed, we suggested that such a procedure would be disadvantageous in promoting antagonism between the Press and radio. After writing that article we encountered the following letter in the "Editor and Publisher," a leading American trade newspaper. This letter follows an article dealing with the assistance given by the Press to the American radio service on the occasion of the presidential elections. The incident marks to our mind the beginning of an important movement in American journalism for collaboration with radio on defined lines. The letter forcibly illustrates the strength of the point we made.

Radio and Elections.

TO "Editor and Publisher."
"Radio and Elections"—that was good of you. It is certainly hitting the ball for a sleepy Press. It was voted a year ago by the members of the Associated Press to give the election returns to the radio hookup, but if my feelings are at all typical of the rest of the fraternity the radio will gather its own news the next time if they give out any election information.

To show you that we are asleep in this part of the country at least, I call your attention to the fact that we have been running a daily programme of radio numbers furnished by the Associated Press, and to my horror I only discovered the first of this week that more than half the feature numbers of the various programmes were made up of gum hours, tobacco hours, or some other kind of advertising hours. I immediately awoke and gave orders to ditch the stuff, and wrote to the A.P. division what I had discovered. They agreed it was a discovery and passed the word on. I note with surprise now that the daily papers on the exchange table continue to run the programme, as is, and find that I was the first guy to awaken from the lethargy.

The Republican National Committee paid 600 dollars to have Bill White's speech broadcast from this city. They only gave him an hour, and the speech would not have been worth a penny for votes had the daily papers neglected to play it up all over the country.

The radio has its place in the sun, and any of us will freely and gladly admit that, but when they offer themselves as advertising medium of any consequence, and more especially of a value they set up at present schedules, they are shooting wide of the mark and the daily papers are foolish to dignify their programmes by an advance notice.

More than a half-dozen foreign accounts which heretofore have been exclusively with the daily Press have recently given the big end of their budget to radio, and had the nerve to request reader space in the daily papers to tell the people all about it.

Here's my hand, "Editor and Publisher"! Stir the natives up and let's get about our business, as it concerns a very important feature.

CHAS. SPENCER,
General Manager, "Independence
(Kan.) Daily Reporter."

Licenses Total 44,690

Comparison of Yearly Returns

AS on January 11 the figures relating to radio licenses, as issued by the Post and Telegraph Department, were:—

	Receiving	Transmitting	Dealers	Total
AUCKLAND	14,468	60	421	14,949
WELLINGTON	17,368	59	603	18,030
CHRISTCHURCH	8,246	37	281	8,564
DUNEDIN	2,958	25	164	3,147
	43,040	181	1,469	44,690

An official return (states "The Dominion") shows that at the end of last year there were 42,801 radio receiving licenses on issue in the Dominion, as compared with 38,185 twelve months previously—an increase of 4,616 for the year. Transmitting licenses increased in number from 136 to 169, dealers' licenses decreased from 1728 to 1464, and broadcasting licenses, which numbered 7 at the end of 1927, were doubled. In addition, 179 licenses have been issued free to blind listeners. In the aggregate, excluding the free list, the number of licenses has increased during 1928 by 4392.

The following table shows the number of receiving, transmission, and dealers' licenses on issue in the four radio districts at the end of 1928, as compared with 1927, the latter figures being given in parentheses:—

	Rec.	Trans.	Dealers.
Auckland ..	14,437 (13,589)	58 (43)	420 (493)
Wellington	17,272 (14,477)	56 (40)	601 (760)
Canterbury ..	8,167 (7,953)	34 (27)	280 (301)
Otago	2,925 (2,166)	21 (17)	163 (174)
	42,801 (38,185)	169 (136)	1464 (1728)

Fewer Dealers.

The most significant feature of the above totals is the falling off during the past twelve months in the number of dealers' licenses—a decrease of 264, or about one-sixth. This is probably attributable to the unduly large proportion of dealers to listeners in which grew up when the broadcasting novelty was introduced two or three years ago.

It was inevitable that the proportion of one dealer to every 22 licenses which obtained in 1927 would not be maintained, and the decline seems to indicate that many of the dealers are not finding their business sufficiently profitable, as is natural in the circumstances. The biggest drop in the number of dealers' licenses has occurred in the Wellington district, where apparently 160 have been obliged to cease their operations.

Otago Lags Behind.

Another conspicuous point about the return is the comparatively small extent to which Otago people have made use of the broadcasting facilities, despite the fact that Dunedin practically led the way, during the Exhibition, in good broadcasting. During the past year licensees in that area have increased in number by 759, but a smaller increase is shown in Canterbury, where the radio services have gained only 214 new patrons. Auckland has added 759 new enthusiasts to its list, and the popularity of the Wellington programmes would appear to be paramount from the fact that no fewer than 2795 new licensees have been enrolled in the last twelve months, considerably more than have been gained in the other three districts put together, while the licensees are 2835 more in the aggregate than those in Auckland.

A little less than one-half of the free licenses which have been issued to the blind are held in Auckland, where the Jubilee Institute is situated. Of the remainder, the privilege has been extended to 47 persons in Canterbury, and 28 in each of the two other districts.

Of the 14 broadcasting licenses, five are held in Otago, four in Wellington, three in Auckland, and two in Canterbury.

New Plymouth Station Rebroadcasting by 1YA

THE transmitting plant for the New Plymouth broadcasting station is being assembled in Christchurch. The chief engineer of the broadcasting company is busy on the job and already the intricate mechanism is taking definite shape. The plant will be thoroughly tested out in Christchurch before being sent to New Plymouth which will be able to boast a thoroughly efficient transmitting station. The apparatus which is being used has been selected from the various small plants taken over by the broadcasting company. The motor generator has been cabled for and is probably now on the sea.

Receiving Station at Orakei

FOR the purpose of rebroadcasting the transmissions of New Zealand and overseas stations, 1YA has for some time been conducting investigations with the view to erecting a receiving station in a locality where reception is good. Such a site has been found at the Orakei Defence Reserve, and the broadcasting company has been

Auckland Comedy Players

1YA's Splendid Record

MR. J. F. Montague continue to present his Comedy Players in bright and entertaining plays which give a delightful variety to the 1YA programmes and in this respect the Auckland station is well ahead of the other New Zealand stations up to the present. During the past year Mr. Montague has presented the following striking one-act plays: "How He Lied to Her Husband," "Just Fancy," "Wednesday or Friday," "Bobbie," "Campbell of Kil-mohr" (twice), "The Artist," "The Perfect Pair" (twice), "Going Away," "When He Comes Home," "The Plumbers," "Harmony," "Catherine Parr," "A True Test," "Guns and Guns" (twice), "The Playwright," "Which is Which?" "Between the Courses," "Two of a Kind," "Bardell and Pickwick Trial," and scenes from "The School for Scandal." In addition to these, Mr. Montague has presented four full-evening plays, "Mary, Mary, Quite Contrary" (a four-act comedy, by St. John Ervine); John Drinkwater's great historical play, "Oliver Cromwell"; Oscar Wilde's brilliant three-act comedy, "The Importance of Being Earnest," and Shakespeare's tragedy, "Macbeth." In every instance the plays have been presented in a bright and attractive manner that reflects the greatest credit on the producer. This is fully confirmed in the numerous letters received by Mr. Montague from all parts of New Zealand, and in the numerous requests received for "repeat" performances.

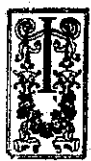
Listeners will be glad to know that Mr. Montague will continue to broadcast other plays during the present year, and among those in preparation are "The Banns of Marriage" (Lee), "The Artist" (a "repeat" performance), "Disgrace" (Amplion), "They Write a Play," "The Twelve Pound Look" (Barrie), "A Scotch Philosopher," "The Constant Lover," "A Maker of Dreams," "Old Pals," "Pooz Old Dad," "Too Many Cooks," etc., and he hopes also to broadcast the winning New Zealand play in the competition, which is now open to New Zealand writers, for which the Broadcasting Company is offering special prizes. In addition to these one-act plays the Comedy Players have in contemplation the production of several whole evening plays, including "Fanny's First Play" (Bernard Shaw), "Justice" (Galsworthy), "The Young Person in Pink," etc.

A PHOTOGRAPH of Colonel Lindbergh was recently transmitted from an aeroplane, and although it was received rather faintly at the ground stations, it was clearly representative of the well-known Atlantic flyer.

granted permission by the Defence Department to complete the necessary station. When negotiations are finalised, the company will erect the necessary aerial and instal short and long wave receiving sets. A relay line will connect the receiving station with 1YA studio when the rebroadcasts of what is received at Orakei will be carried out.

Quality Reception from Long Distance

How it may be Secured



Is it possible to obtain good quality in the reception of distant stations? I say emphatically, Yes, states R.W.H., in "World Radio," provided that one has the right type of receiving set and knows how to use it. This does not mean that any station, no matter where it may be situated or what its power, is receivable with first-rate quality; nor would I go so far as to claim that to a really critical ear loudspeaker reproduction of even the best of foreign stations is absolutely as good as that which we associate with the local station. To hear wireless programmes to perfection the receiving aerial should be situated at a comparatively short distance from the transmitter; as the range increases there is always bound to be a certain falling-off in quality.

This falling-off is not necessarily very great, and if one sets about it in the right way it is possible to obtain from a number of Continental stations reception that is genuinely worth listening to. It must, of course, be borne in mind that on the broadcast band (200m. to 550m.) fading sets in at distances greater than those of the order of 80 to 100 miles no matter what the power of the transmitter.

The local station scores heavily by being able to force itself upon one, so to speak, to a great extent. What I am driving at is that do what you will the tuning, when it is being received, must always be somewhat broad. The energy reaching the aerial

is so great that unless you resort to quite extraordinary expedients it is difficult to cut down sidebands sufficiently to mar the full beauty of the transmission. With the distant station matters are rather different.

One can hope for really good reception only if the transmission that is coming through is powerful enough to

wise he will not be able to pick up when he wishes to do so the weak signals that come from distant stations. To obtain the requisite degree of sensitiveness a reasonable amount of genuine high-frequency amplification must be used, and not infrequently this is eked out by the misuse of a spurious form of amplification.

IT is a common belief that all reception from a distance is not worth listening to. It has been asserted that the only justification for DX reception is the logging of elusive foreigners. But this is not necessarily the case, as a correspondent to "World Radio" asserts. There is a charm in listening to foreigners, even if not a word can be understood, while the reception of the Americans is, from a point of view of our relations with them, really worth while. Unless the distant programme can be clearly received it is not worth while. The accompanying article tells how this may be realised.

exercise a certain amount of wipe-out upon those on either side of it. When this is so the sidebands are not lost to any serious extent, provided that the receiver is not over-selective, and good quality results.

Sets for DX are Over-selective.

THE trouble with many sets designed for long distance work is that, from the quality point of view, they are over-selective. Here we are brought face to face with a difficulty. The long-distance enthusiast wishes his receiving set to be sensitive, for other-

"Eke out?" "Spurious?" I can see see what the man's getting at; he means reaction." Quite true; reaction properly used is a real blessing to the long-distance man; badly used or over-used it is responsible for a whole host of evils. It leads to a cutting of sidebands, to noisy and mushy reception and not infrequently to a good deal of interference, not only with one's own pleasure, but also with that of one's neighbours.

For long-distance work the use of reaction is almost essential for one very good reason. We are almost bound in such sets to employ the grid-leak and condenser rectifier owing to its remarkable sensitiveness to weak signals. This kind of rectifier depends for its working upon a flow of current in the grid circuit, and such a flow necessarily leads to the introduction of damping in that circuit. By using reaction the damping can be counteracted to a great extent, which means that tuning is sharpened. But reaction must not be overdone; we must depend, if we want quality, more upon genuine high-frequency amplification.

The Use of Grid Screen.

IN the old days at least two stages of high-frequency amplification were required, and one was doing well if he obtained quite a small amount of magnification from each. To-day the screen-grid valve enables us to get from one high-frequency stage almost as much amplification as is normally obtainable from two triodes. With two such valves in cascade the very limit of H.F. amplification is reached. This means that with either one or two screen-grid valves as H.F. amplifiers we can apply to the grid of the rectifier reasonably strong impulses.

THE gridleak and condenser rectifier scores only when the impulses reaching it are weak. With strong impulses we can substitute the anode bend rectifier, in whose grid circuit no current flows, and therefore decrease the amount of damping present without having recourse to reaction.

To do without reaction altogether is perhaps a Utopian ideal; nor do many people use two screen-grid valves in cascade. But a single stage of high-

frequency amplification with the help of a valve of this type, followed by an anode bend rectifier, means that very little reaction is required as a general rule to attain the desired degree of sensitiveness and selectivity. In a word, reaction is there when for some purpose we require an extra amount of selectivity, but in the ordinary way we do not need to make any great use of it since we already have sufficient genuine high-frequency amplification to bring in at good strength such stations as are really worth hearing.

Not all stations are worth hearing. When quality is desired it pays handsomely to select only those stations whose transmissions come through strongly, for it must be realised that no station can be well heard unless its power is sufficient to drown mush, small atmospherics, and other forms of interference that are nearly always present in long-distance reception. If signal strength is only just equal to that of whatever interference there may be, then both the desired signal and the undesired noises will be equally brought out. Choose, therefore, for good quality only those stations which are easily received.

Once a good station has been tuned in and brought up to good volume, see whether you cannot slacken the reaction coupling to some extent. Quite often it is possible to do so without reducing the volume unduly, and usually there is a big gain in quality.

Rely for long-distance work upon high-frequency rather than upon low-frequency amplification.

It is quite possible to obtain a very big overall magnification by the use of two or even three efficient low-frequency stages. But generally the use of these will add to a number of evils. The set is likely to become distinctly microphonic; if atmospherics are about the interference that they cause will be unduly brought out, and if the batteries are not right up to the mark any defects will be very badly shown up.

The conclusion that we come to is this:—

Really good reception is possible from distant stations provided that they produce reasonably strong signals; genuine high-frequency amplification is necessary; too much reliance should not be placed upon reaction; signals of good telephone strength can be brought up to loudspeaker volume by means of low-frequency amplification, but it is not sound practice to endeavour to magnify at low-frequency a very weak output from the rectifying valve.

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NEW PLYMOUTH.

WELLINGTON — PALMERSTON

A Query?

I WONDER if some reader could inform me what the following station is:

On Wednesday, January 9, 1929, I tuned-in to 4ZM, Dunedin, who was testing with 4ZB. I listened until about 11.15 p.m., when I heard another station about on 280 metres. First of all I heard a Player piano for a few minutes, and then the announcer made what seemed to me to be the closing announcement; there was not enough volume to distinguish the words.—A. D. ROGERS (Newtown).

[Probably 2ZF, Palmerston North.]

Californian Stations.

IN answer to E. Ellis's query of KEKJ, California, I picked the station up on November 6, but through noises I took it for KJAK, Beverly Hill, California. The announcer said: "This is our new station, situated in the Beverly Hills, California, operating on a power of 500 watts." Nearly every night I can hear KHJ heterodyning 1YA. Has anybody heard KRLD, Dallas, Texas, broadcasting a test on a wavelength of about 285 metres? I picked it up on December 9. KMX, Curmont, operated by the Radio Club, Sylverston, is on the same wave. They are both strong stations, as KMX sometimes drowns 2ZF. CNRV, Vancouver, is a point above KMX. I picked CNRV upon October 31, and have been unable to pick him up since. In closing I hope that more DX men will send in their lists.—E. HILL (Mangapai).

New American Stations.

THE following notes may be of interest to DX listeners. KNX, Hollywood, California, 286 metres, the Paramount Pictures station, may be heard every night except Monday, then Sunday, up till 9 p.m. Between 8 and 9 p.m. our time, they have their Radio Clubs, silver fizz hour of dance, and were heard on Wednesday night on about 371 metres up till midnight, when they signed off (4 a.m. their time). This must be a new station. WLW, Cincinnati, 428 metres, as well as several of the other bigger Central and Eastern American stations, may be heard on favourable nights from 11.45 p.m. onwards, when they are on the early morning session of health exercises, talks, music, etc. WLW, when they opened up the other morning at 6.45, their time (11.45 p.m. our time), announced that as the moon was still shining, they would put on an appropriate number. "Sweeping the Cobwebs off the Moon." The following stations have been heard lately between 6 p.m. and 10 p.m., our time:—WLAG, KSL, WMAQ, KRLD, KHHL, WART, KNX, KFON, KELW, KGB, KEX, KFKB, KPO, KFWB, KFVD, KGA, WBBM, WZZ, KTZI, KMOX, WERN, KHJ, KEJK, KGO, KNRC, KFI, KDA, WJKS, KFNT, KGER, KTSA, CNRM, OFCN.

In answer to questions in this week's "Radio Record," "Satisfied Listener" mentions WGN, Chicago. I think this is WENR, 345 metres, as the last item on their programme is "The End of a Day," specially written for that station; they give the signing-off announcement while this is being played. KEJK is on the same wavelength as KFON, namely, 240 metres. These two stations must divide time, as KFON announced when signing-off the other night that KEJK would come on the air immediately. The station that heterodynes 1YA is KHJ, 333

THE D.X. CLUB

Views and News.

metres. The station operating on 2FC's wavelength is KPO, San Francisco. They have been coming through fairly well lately. The station WHER which "Kausparker," Hastings, mentions, was probably WART, Birmingham, Alabama, on 1140 kilocycles. They were very loud on New Year's Day night, which was their official opening. I find that by using 112A tubes in the radio frequency sockets instead of the 201A type the volume is increased by about 50 per cent. A 112A tube in the detector socket also gives good results. When this change is made the set will become unbalanced, especially if regeneration is taking place, and will have to be rebalanced to get the best tuning results. Look out you do not annoy your neighbours if you try this.—"NEUTRODYNE."

On 306 Metres.

WHILE listening in to-night at 7 p.m. I heard a strong carrier about a degree below 3YA, which at the time was closing its children's session. Would this by any chance be KGR or KDKA on 306 metres or WBZ on 303 metres, as in the "Radio Record" of January 4? The carrier of the stranger and 3YA ran into each other. The midday sessions were appreciated here.—J. WATSON (Palmerston North).

[Probably this was KGR, but it is impossible to identify with any certainty. The correspondent asks for the reappearance of certain artists. This has been referred to the Radio Broadcasting Company.]

2KRP.

COULD a member of your "DX" Club oblige with the situation of a station which I received on January 3 at 11 p.m. testing on records? The call sign was given as 2KRP. Another also on the 20-50 metre wavelength was heard, describing his transmitter; call sign given being PJQ.—V.M. (Wellington).

On 228 Metres.

I HAVE seen in your columns lately some questions about the station which is seemingly on 1YA's wavelength. I hear music often between the Auckland station's announcements, especially during the 7.15 p.m.-7.45 p.m. session. I would be pleased if you could tell me if this is connected with 1YA or if it is a separate station, also could you tell me a station on about 228 metres, fading badly? In the last issue of your paper you published a list of American stations. Could you please tell me what time these or some of these stations operate?—M. R. CARDON (Auckland).

A correspondent in last week's issue dealt with this question of heterodyning 1YA. Some DX enthusiast may be able to identify the station on 228 metres. Some one may also give the times they hear the Americans.

KWKH Station.

I HAVE just read Mr. Arcutti's letter in your "Mail Bag" disbelief-

ing that the station just above 2BL is KWKH. I have had this station several times and in the same position referred to, and have heard the call KWKH very plainly. There is a station just a bit above again, near 361 metres, the call being KOA, which I received on the evening of December 4, 1928. The Yanks I have heard on 1YA wavelength are KHJ, WFLA and WRM and KLX just ahead (November 13-December 22, 1928); WGES and WLW on each side of 2YA; WHO and KJR on each side of 3YA. Hoping these might help to clear up some of the mystery stations.—C. V. BLUCHER (Waihopo).

A Good Log.

MR. ELLIS'S idea for a DX corner is, I think, just the thing. I have heard a station lately working very long hours and signing off 11.30 p.m. N.Z.M.T. (KZM, Los Angeles), the Z pronounced like C or Zee. Announced that they were always on

from 1.4 a.m., Thursdays, P.S.T., for special dance music for parties, etc.

November 18, 1928, 7 p.m.-7.27 p.m., N.Z.M.T., heard WFLA (Clearwater, Florida), testing on 333 metres. November 14, KSL, 5000 W., heard on 1130 K.C. November 17, KJR between 3YA and 2GB, Sydney; November 17, KOMO, 1 degree or so below 1YA. November 18, WENR, 50,000 W., on 870 K.C. or 344 3-10 metres. November 20, WHO (Iowa), just below 3YA.

Others heard are WGES, KDYL, KMA, KRLD, KWKH, KOA, KFWB, KGER, KFKB, WIBW, KFON, WRM, WBBM, KMIC, KFSD, KEX, KLX, KMOX, KNX, WLW, KTAB, all on their new waves. WLW just above 2YA has been on very late lately; I have heard him on at 11.45 p.m., N.Z.M.T.; also one on 333 metres, a Yank by the speech.

My set is four valves (1R.F., R.E.G.D., 2A.F.), factory made, and headphones for the DX work. So here's luck to the DX corner.—CYRIL V. BLUCHER (Waihopo).

THE Oslo Broadcasting Company now exercise a broadcasting jurisdiction over the whole of Norway, with the exception of the stations at Bergen, Alesund, and Tromso. In order adequately to cover this large area a new station will be constructed in Oslo.

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G.C.T.

IN your issue for January 4 you inform an inquirer, S.V.B., that G.C.T., as used by QST, means general central time. Well, that is a bad guess on somebody's part. It means Greenwich civil time, and your inquirer will find full details on page 8 of QST for March, 1927. As some of your other readers may be interested, I will give a short resume of the article.

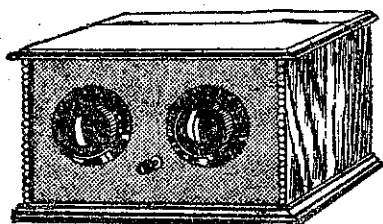
There are two kinds of time used, Civil time, and mean time, which is the hour angle of the mean sun. Civil time commences at midnight, and comprises twenty-four hours to the next midnight. This is the time people live by. Mean time, commencing at noon, is used for astronomical purposes.

Now, almost everybody all over the world has been using Greenwich civil time, but calling it Greenwich mean time. When this was pointed out in QST, that journal immediately changed over to the correct time, G.C.T. Thus 12 noon N.Z. time is 00.30 G.C.T., but 12.30 G.M.T.

Summing up, we should keep on thinking in the same figures that we have in the past, but calling it G.C.T., or simply Greenwich time—not G.M.T.—C. W. PARTON (ZL3CP).

[The error was noticed and corrected in our last issue. However, the difference between G.C.T. and G.M.T. was not made clear.—Osver.]

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The 2-VALVE WATMEL

A Set that is British from Aerial to Earth, employing a highly efficient circuit excellently suited to N.Z. conditions.

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A Corner for Beginners

—By Observer—

Meaning of G.C.T.

"S.V.B." (Stratford), wrote last week asking for the meaning of the letters G.C.T., which he encountered in Q.S.T. The letters stand for Greenwich Civil Time. Perhaps I had better explain exactly what G.C.T. is. As you all know, Greenwich is the place where there is an observatory from whence the time of the world is calculated. At Greenwich a new day starts when the sun is overhead there. Now, the clocks in London indicate midday at that time. Therefore, there are two distinct times in London. In order to distinguish between the two, the time at the observatory is called the astronomical time, or as it is more commonly called, Greenwich mean time, or G.M.T., and the time the London people use is Greenwich civil time, or G.C.T. If "S.V.B." can obtain a copy of March, 1927, Q.S.T., he will find in

TO A.C. SET OWNERS.

Have you ever noticed the instructions not to put your hands inside the set when the power is on? If not, look up these instructions: they may save a rather nasty jar.

the editorial of that magazine an article explaining in clearer terms than I have been able to, the distinction between the two times. I would also like to point out that there are four different times in the United States. They are (from west to east), Pacific (P.S.T.), mountain (M.S.T.), Central (C.S.T.), and Eastern (E.S.T.). In Canada there are five different times. From west to east they are: Pacific (P.S.T.), mountain (M.S.T.), Central (C.S.T.), Eastern (E.S.T.), and inter-colonial (I.S.T.).—C.C.J.

Rheostats.

ONLY recently a correspondent wrote, complaining of a trouble which pointed to a defective rheostat. After some time, the arm of the rheostat loses its spring, and fails to make a good contact. This not only gives noisy, but intermittent reception.

A particular case is quite worth mentioning here. The owner of a quite simple set was greatly troubled by noises, especially when the rheostat was turned. The spluttering caused by that noisy control was sufficient to drown out or badly distort reception. At times, it would work loose, and cause intermittent reception. Quite frequently, a footfall would be enough to silence the set.

By the aid of a screwdriver and pliers, the contact was greatly improved. The contact arm was bent inwards to form a surer contact with the winding.

However, the noise in the speaker when the knob was turned, remained,

and so the rheostat, which had done quite good service, was discarded.

It pays to examine these pieces of radio apparatus frequently, tightening up, and if necessary, replacing. Like everything that is constantly in use, it wears loose if not attended to regularly.

By the way, do you turn the rheostats to zero before shutting off the switch? If you don't, reform, and do so henceforth.

Faulty Terminals.

THESE can cause more troubles than noises. Just recently, a case of this kind has been reported. Reception from a big valve set was weak, so weak that 2YA came in as a whisper. A careful examination was made, commencing at the batteries. B's, battery, O.K. A battery—terminals very much corroded. A thick layer of deposits from the liquid had been allowed to settle round the contacts, so that the spring clips did not get a chance. The introduction of a pocket knife cleaned things up a great deal. The station came in much clearer, and the noise was reduced. The set was by no means right, but the other trouble comes under another head.

See that all terminals are clean. Particularly those A battery contacts. They become corroded very quickly, and cause a great deal of trouble. Don't think because you are getting weak signals that the A battery is lasting all the longer. Probably the reverse, as much energy is required to overcome the resistance of the deposit. The end of the flex attached to the battery clip may be nearly eaten away by acid so that only a few strands are left to carry the heavy current—more resistance, more noise, more weak signals.

Clip off this end when it is in this state, and make a new, clean soldered joint. It is well worth while.

Broken-down Grid Leak.

A FAULT which often escapes notice is a breakdown in the grid leak. The newer metalised leaks are less liable to failure than the older carbon leaks, but faults, which are specially noticeable when receiving fairly weak signals or distant stations, still occur occasionally. Once a grid leak shows signs of these defects it is impossible to repair it, and it must be replaced. Blocking condensers, especially the cheaper kinds, with waxed paper as the dielectric often break down and cause receiver noises.

Although mica blocking condensers are slightly more expensive than the paper ones, their use is justified, because the breakdown of a blocking condenser can often result in the destruction of a high-tension battery or even the burning-out of the valves in a receiver.

An Unusual Short Circuit.

AN interesting short circuit of a peculiar nature was discovered recent-

ly in a factory-made receiver of a well-known make. The receiver provided entirely satisfactory service for several months before the trouble developed, and then the owner reported that the only way it was possible to obtain reception was to remove the first high-frequency valve.

On replacing the valve, it was found that this was not the trouble. Upon removing the set from the cabinet the usual test failed to indicate where the trouble was situated. Finally it was discovered that when the high-frequency valve was pressed into its socket, instead of the prongs pressing into their correct contact springs one of them missed the spring, and was making contact with another pin, thus directly causing a short circuit.

A simple operation with a pair of pliers shifted the spring to the correct position and corrected the difficulty.

Carelessness in Soldering.

INNUMERABLE short circuits are caused by carelessness in soldering, even in factory-made receivers. A recent example of this occurred to the owner of a factory-made set. The set had been operating perfectly for a period of three months, when it suddenly stopped, and all the tests failed to locate the cause of the stoppage. Finally it was discovered after a careful examination, that a thread of solder, which was so fine that it was barely visible to the eye, was across the aerial and the ground terminals.

SHUTTING OFF ELIMINATORS.

More instructions that are worth noting:—Always turn off the eliminator before the filaments. Failure to do this may mean short life to the eliminator, and one cannot be replaced very cheaply.

This thread of solder probably was caused by the iron being slid from one connection to another when the set was wired, and did not cause a short circuit until the vibrations from the speaker caused it to sag.

However, in the proper position, a thin piece of solder is as effective in stopping the operation of a receiver as a piece of No. 14 bus bar.

A Homely Simile.

IF you sit in a room with an electric lamp aglow, provided that the supply is A.C., as it is called, the effect of the oscillation may be observed quite distinctly if you look at the lower end, or pip, of the globe. If, on doing this, you shade your eyes by means of your hand or the brim of a hat, a pronounced flicker will be apparent.

Try to imagine, then, what must be the speed of oscillation of radio waves when they alternate at a frequency of anything from 10,000 to 300,000,000 cycles per second. Such a speed is almost incomprehensible. Yet it is this very speed of oscillation which makes radio transmission and reception possible.

WHEN ebonite tubing has to be cut into short lengths for frame aerial supports, etc., the difficulty of holding it in the vice can be overcome by using a wooden block drilled to about the same diameter as the tube and then halved to form two shaped blocks, which can easily be held in the vice.

Push-pull Resistance Coupled.

I should be grateful if you will supply me with the following information:—

(1) Are the results satisfactory when A.C. is used on the filaments of a resistance-coupled amplifier? I am assuming that potentiometers are used across the filament leads for balancing out the hum.

(2) Would the output of a transformer-coupled push-pull stage be much greater than that of a resistance-coupled push-pull stage, assuming that the input be the same in both cases and the same tubes be used in each case?—G.T.R., Gisborne.

ANSWERS:—(1) No, unless special A.C. valves are to be used; raw A.C. cannot be used on any other than the power valve.

(2) Yes, the output from a transformer-coupled amplifier would be greater because of the stepping up propensities of the transformers themselves.

Scratching Noises.

I AM wondering if you will kindly give me a little instruction concerning my factory-built wireless set of six valves—the faults are a crackling on Christchurch and Auckland, like static noises. Wireless expert says everything in set in good order, also loud speaker. When earth wire and aerial wire are off the noise does not come in so am completely at a loss to know what to do.—F.M. (Island Bay).

ANSWER:—The correspondent has gone about finding his trouble in the right manner when he disconnects the aerial and the earth to see if the trouble is in the set or in the aerial and the earth systems. The results go to show that the noises are originating, not in the set itself but in the aerial or the earth connections or are caused by a power leakage.

The first duty of the trouble-seeker in this case would be to compare notes with another radio enthusiast in the same neighbourhood to ascertain whether or not the trouble is being caused by a power leakage. This being the case, a complaint should be addressed to the District Telegraph Engineer.

It is more likely, however, that in this case the cause of the disturbance lies in the aerial and the earth connections. These should be carefully examined.

First examine the connections to the set itself and make sure that these are clean and making good contact with the terminals. Proceed from these points to the ground and to the aerial, examining carefully for faulty joins, wires broken within their insulation, and any such defects. It may be that there is in the immediate neighbourhood an electric instrument that is leaking and causing the trouble. A faulty electric motor of any description would cause this trouble, and, in these days of vacuum cleaners, electric sewing machine motors and violet ray apparatus, trouble might be unwittingly caused.

The "Rotorua" Portable.

I have lately completed the portable set described in your pages, and it is a great success. I have tried it 20 and 30 miles from 3YA and speaker strength was good although at 30 miles the volume was not great. Everyone comments on the tone, and it is ideal for local station work. Wellington is also heard distinctly on the speaker, using the frame aerial. With the main

aerial attached, 1YA and 4YA are good, and 2BL and 2FC distinct but not loud. I am using my old speaker still as the dealers in town have been unable, so far, to get any information re the P.C.J.J. unit.

However, the set is naturally rather unselective, and I have been wonder-

as the acid soaks into the lead compound and the acid level must be kept above the plates.

The first charge must be at a fairly high rate, so that the chemical change that takes place will be completed within a certain time. Until this change has taken place the paste is

Important Notice Regarding Enquiries

AS our service is now being fully availed of and as almost every mail brings in a large number of enquiries on various topics, it has become necessary to adopt some system of uniformity. Correspondents are therefore requested to observe carefully the following points. Failure to observe these may mean delay in answering and even the loss of the letter.

1. Addresses.—All technical correspondence, whether inviting reply or not, must, in future, be addressed: "The Technical Editor," "N.Z. Radio Record," Box 1032, Wellington. This includes letters to "Pentode," "Galena," and "Observer," as well as those that have in the past been erroneously addressed the Editor.

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

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

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

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

ing of there is some way in which a "shielded grid booster" could be added when the main aerial is in use. The frame forming the grid coil makes this rather difficult, but I would be glad if you could give me any information re this point.—D. A. LANE (Christchurch).

ANSWER:—A shield grid booster such as that described by Megohm some time ago could easily be added to the portable set described by "Pentode" in our special issue. The method of connection is this:—Connect the main aerial to the loop. From the loop take leads to the booster input, from the output leads go to the set in the usual manner. This is the only position in which a booster can be employed with this set.

Charging Rate for Accumulators.

I HAVE purchased a new six-volt accumulator, and the following instructions are given on the outside:—First charge: Fill with acid, 1,300 sp. gr., and allow to stand for 12 hours before charging. Charge at 6 amps. for 24 hours, and add acid during charge, 1,300 sp. gr. . . .

Does the "charge at 6 amps." refer to the first charge only, or is it the charging rate for all charges given the battery?

Would it be harmful to charge a battery with a charging rate of 6 amps. with a charger giving $\frac{1}{2}$ amp?—B. S. D'ATH (Wanganui).

ANSWER.—These instructions should be strictly adhered to when making the first charge, as the life of the battery largely depends on this early treatment. There is generally a reason for everything. The specified sp. gr. is correct for that type of battery. Allow to stand to let the acid thoroughly impregnate the more or less porous plates. Air bubbles rise

current is left? Why won't my valves use up all the electricity in the cells?"

THE voltage as measured by the voltmeter shows pressure. Take a simple analogy. Imagine a tank of water to be connected to a tap which is slightly higher than the middle of the tank. When the tap is turned on when the tank is full the water flows easily and gives a plentiful supply of water, but when the water is low the pressure falls off and there is a difficulty in obtaining water; at last the flow ceases though the tank is yet half full. The batteries of the wireless set work in a somewhat similar fashion. The pressure is the voltage; the amount of water supplied the amperage. Owing to the resistance offered by the set all the electricity cannot be drained off and unless the batteries are not kept well up a copious supply cannot be afforded the valves.

Lightning Danger.

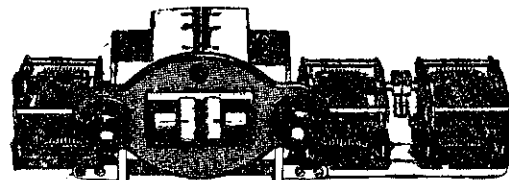
"IS there any likelihood of an aerial being struck with lightning, and what steps could be taken to prevent this happening?"

AERIALS are only rarely struck with lightning, so that there is no cause for anyone refraining from installing a set because of the lightning risk. However, one precaution is essential. The regulations of the Fire Underwriters of New Zealand stipulate that a lightning arrester be used in every wireless set. All that is necessary to instal this inexpensive piece of apparatus is to connect one end to the aerial and the other to the ground or to the earth terminal of the set. This is a sure precaution against lightning entering the set, for should it strike the aerial and enter the arrester it merely runs to earth. After an aerial is struck in this manner the set would refuse to function until the old arrester was removed, as the aerial and the earth were joined by the lightning.

Battery Voltage.

"WHY do I have to discard my batteries when the voltage drops but still shows that a certain amount of

A SOFT rag with a trace of medicinal paraffin oil is quite a good renovator for french-polished cabinets.

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A Sugary Road to Slimness

EAT more sugar and get slim! This is a purely scientific method based upon the fact that sugar is a carbon and acts as a fuel in the body, burning up superfluous fat. Give up alcohol, tea between meals, drinking with meals, suet puddings, and too much butter; but stick to an ordinary commonsense diet; cut down your food allowance; take a fair amount of exercise, but don't cut down your sugar—rather increase it. This is no lightning cure, but is worth giving a fair trial.



Radio Pancakes

Now and again some good cooking hints come over the air—but the wise housewife doesn't rely on them alone—she sends for the new "Anchor" Recipe Folder, and keeps it on hand. Like a copy? It's free. Write "Anchor," Box 844, Auckland.

ANCHOR
SKIM MILK
POWDER

THE WOMAN'S POINT OF VIEW

By "VERITY"

About Omelettes

THE following hints about omelette are published at the special request of one of our readers:—Any omelette, whether plain, sweet, or savoury, should be served as soon as it is cooked, otherwise it will toughen. Eggs and butter used should be as fresh as possible. The omelette pan must never be used for any other purpose, and should never be washed. Cleanse by heating it and rubbing with a coarse towel and salt, and then polish with a clean cloth. Beat the eggs thoroughly with a fork, not a whisk. The eggs need not be frothy, and it is as well to add a little milk or cream when beating, as this makes the omelette lighter and moister. The butter should be hot, but not oily, before the mixture is poured into the pan. The success of an omelette largely depends upon the rapidity of the whole process. A plain omelette should not take more than five minutes to prepare and cook.

Plain Omelette.

FOUR or five eggs, one ounce butter, one tablespoon milk or cream, pepper and salt. Break the eggs into a basin, beat well with a fork, add cream and seasoning. Dissolve butter in omelette pan; when hot, pour in mixture. Stir slowly over a good heat, shaking the pan. When set, shape the omelette on one side of pan, allow to colour a golden brown, turn quickly on to hot dish and serve.

Kidney Omelette.

SKIN two sheep's kidneys, cut into thin slices, season and fry with one ounce of butter and a very small chopped shallot; add a little brown sauce and keep hot. Beat five eggs with two tablespoons of milk, and season. Melt one ounce of butter in pan and pour in mixture. When it begins to set, put in stewed kidneys and fold ends of omelette over. When browned, slip on to a hot dish and pour a little hot tomato sauce round. Serve at once.

To Shape an Omelette.

WHEN the mixture begins to set, tilt the pan, shake gently to loosen omelette, and fold over to opposite side from handle. To turn out of pan, hold handle in right hand, palm underneath. Hold dish in left hand, bring outer edge of pan near centre of dish, turn pan upside-down quickly.

Tomato Soup.

2 cups of water, 3 tablespoons of "Anchor" milk powder, 6 medium-sized tomatoes, 1 tablespoon flour, 1 tablespoon butter, pepper and salt to taste, pinch of carbonate soda.

To make the milk.—Mix the water and the milk powder according to directions given.

Method.—Place the butter and flour in a saucepan, stir over the fire, then add the tomatoes ready skinned and sliced. When hot, add the milk, boil

Cleaning Eiderdowns

HAVE you an eiderdown which looks soiled?

If so, don't imagine that the only means of restoring its freshness is to have it cleaned or re-covered; but just try washing it at home. Few people realise how simple and satisfactory this method is if a little care is used in handling the quilt.

Choose a windy, dry day, if possible, so that it can be hung out of doors, as the quicker it dries the better. You need plenty of warm water and good soap which makes plenty of lather.

Dip the quilt right into the water and wash it by gently squeezing and kneading. Don't rub it hard with the hands or on a board, or you will tear the cover.

Bringing Up the Down.

Rinse thoroughly in several lots of warm water, and put it through a rubber wringer for preference. If you only have a mangle with wooden rollers, do not screw them too tightly or you will damage the quilt.

By this time the eiderdown looks ruined, for ever, but you need not worry. Hang it on a line out of doors, fastened with plenty of pegs. The drying process will take some time, and the quilt must be shaken frequently to loosen the down, which clogs together when it is damp.

When thoroughly dry, beat it gently with a thin cane to bring up the down. It must be well aired in a warm room or in front of a fire. If you think the cover looks creased and crumpled, a warm iron run lightly over it before it is quite dry will soon put it right.

This treatment will make your grubby eiderdown look as good as new, and can be repeated again and again.

A Nursery Pudding

NURSERY folk are quick to turn up their noses at dishes that nourish but do not attract. Apple meringue is a very wholesome pudding, and, in addition to an intriguing appearance, has a lovely high-sounding name.

Peel and stew the apples and three parts fill your usual nursery dish. Then crumble over the stewed fruit any plain, stale cake you may have until the dish is filled.

Now separate the whites from the yolks of two eggs, and beat the former to a stiff froth. Mix three tablespoonfuls of castor sugar to white of egg and then spread it over the cake and apple. Bake in a slow oven (about 20 minutes) and then carry it, a glistening, golden brown mountain, to the nursery table.

until thick, strain and boil up again with pepper and salt added.

Delicious served with buttered toast.

Add a pinch of soda to prevent curdling.

Vegetable Marrows

VEGETABLE marrows are apt to be rather insipid when boiled, but if cooked in other ways they have a delicate flavour.

Frying is a very simple method. Select a young marrow, peel it, remove the seeds, and cut into rings $\frac{1}{2}$ in. thick. Sprinkle with pepper and salt and a little lemon juice. Allow to stand for about an hour, then drain. Cover each slice with flour and fry in a deep pan of hot fat until brown. Drain on soft paper and serve garnished with fried parsley.

Marrow stuffed whole is delicious. Peel a young marrow and cut off the top. Scoop out the seeds from the centre. Mince 1 lb. beef, add 2 oz. breadcrumbs, pepper and salt, a little chopped herbs and parsley. Mix them with half a pint of brown sauce. Fill the marrow with this stuffing and put it in a well-greased tin. Bake in a warm oven until tender. Serve with sauce and garnish with parsley.

Soup made from marrow is tasty and nourishing. To three pints of stock allow one marrow, 2 oz. margarine, 3 oz. flour, 1 oz. barley, 1 pint milk, 1 onion, 2 oz. ham. Peel the marrow, remove seeds, and cut in small pieces. Peel and mince the onion and cut ham into pieces. Melt 1 oz. margarine in a pan, put in the vegetables and ham, and allow to steam for 15 minutes. Add stock and milk and bring to the boil. Simmer for an hour, then rub through a sieve. Melt the other ounce of margarine, stir in the flour, add it to the soup, and bring to the boil, stirring continually. Season to taste.

An inexpensive chutney can be made from the following recipe:—Take 3 lb. marrow, six onions, 1 lb. sugar, 1 oz. mustard, 3 oz. ground ginger, 1 teaspoonful turmeric, $1\frac{1}{2}$ pints vinegar, and a little salt and pepper. Cut the marrow and onions into small pieces, place in a large bowl, sprinkle with salt. Allow this to stand several hours, then drain. Put vinegar, onions, sugar, spice, and ginger into pan, bring to the boil. Add marrow and boil till tender. Mix mustard and turmeric into a paste with vinegar, and add to the mixture when nearly finished, stirring continuously. Place in jars and cover when cold.

When your throat pricks

take—

Pulmonas

RELIEF BY INHALATION

FOR COUGHS AND COLDS

A Talented and Versatile New Zealander

Mrs. Marjory L. Hannah and Radio Playlets

ON the eve of her departure from New Zealand for an indefinite tour of England, Europe, and America, I was privileged to hold brief farewell commune with Mrs. Marjory Hannah in that home-like flat of hers, the tent-pegs of which are now uprooted, but where, amid an atmosphere of wit, culture, and mementoes of many lands, selected with fastidious acumen, so gracious a hospitality has been extended.

I was tempted to sadness that countless indications of a catholic and cultivated taste in pottery, brass, and art in many manifestations, should be packed away in zinc-lined cases, to await in outer darkness the return of their owner. Many were the books that strewed chairs and wide window ledges; and, while Mrs. Hannah interviewed ubiquitous furniture men, who bumped up the stairs, I reflected how happy in my lot would I be, the world forgetting, by the world forgot, to linger among them. The plays of Mr. Galsworthy were there, of course, and the Forsythe Saga; Letters of Lord Byron, with an entrancing portrait of that beautiful rake; Victorian Essays jostled latest and greatest of modern poets; Mr. Le Gallienne, on The Romantic '90's; the great tetralogy of Polish Ladislus St Reymont; the delicious She-Shanties of Mr. A. P. Herbert, which I nearly carried off then and there.

AMID a confusion worse confounding that was somewhat distracting, Mrs. Hannah moved serene and unperturbed, clad in an attractively patterned lavender gown of an admirable simplicity, its bright cardigan a note of colour, her well-poised head keeping its trim outline. Coming for a moment to rest beside me, she packed an admirable etching, and chatted on matters of moment.

"Radio holds tremendous possibilities for intimate communication," she remarked, and carefully bestowed a safe corner a lovely bit from Berners. On its scope in relation to the drama, Mrs. Hannah grew pensive. "It may be that dialogue will prove the great essential in success of radio playlets," she mused. "Not so much the talent of the actor, who necessarily is not visualised, except in the

imagination. But there must be witty, forceful, picturesque dialogue."

To those who listened to the lecture over the air last week on "Everyday Work at Geneva," there is no need to say anything concerning the resonant voice, as they heard it for themselves, with its clear articu-

affinity of her work with that of certain Continental writers. "I've been reading Baudelaire and Maupassant," she said, "and all the time was aware of that spiritual and mental kinship. And, of course, she is entirely at one with the Russian Tchekov." With which one agrees, reviewing the il-

she has proved herself an unflagging and intellectual exponent. "In England," she remarked, "the plays put on are confined in a great degree to British playwrights; but in America they range the world for the best; the work of dramatists of all nations and the widest scope of vision is selected for presentation,"—this breadth of opportunity and open-eyed tolerance being probably due to the diversified population of the United States, and the surging creeds and classes drawn from all quarters of the wide world that are filling and crowding the big American cities.

OUR Dominion should gain kudos from the projected visit to America, as it is hoped to give lectures there concerning New Zealand life, its scenic beauties, its writers, and its poets. A few years ago one remembers Mrs. Hannah as a brilliant debater at Victoria College; since then hers is a record of achievement that creates a precedent, and almost persuades one into the feminist camp. Notable actor she has proved herself, lecturer, philanthropic worker, and author of two slim books of verse that have been acclaimed by critics with names to conjure with in literary light and leading. In interpretation of some light, bright lady of a modern play, perchance by Mr. Noel Coward, she is excellent; but there are many who find her at her notable best in Irish drama, remembering that great performance of Maurya in Synge's "Riders to the Sea." One of her ambitions is to see something of the work of the Irish Players at the Abbey Theatre, Dublin, where one cherishes hope that her own dramatic flair will find recognition.

Underlying her success in the decorative arts, there is a stratum of sheer practical philanthropy, which has found expression in unselfish kindness and help to many a down-and-out, about which she told me nothing at all. Mrs. Hannah's is a personality that will be missed by a wider circle than those of her immediate friends. With competence and distinction, she has filled innumerable roles, both on the stage and off; and one looks forward to her return, in the not too distant future, to the land she loyally loves, bringing her freshly gathered sheaves with her.—H.V.L.



Mrs. Hannah as the heart-broken Irish mother in "Riders to the Sea."

lation and persuasive cadences; good and pleasant attributes, indeed, in a country where oratory is a neglected art, and English, as she is spoken oftentimes a lamentably slipshod affair.

Of the young genius, native to our Dominion, known to the world as Katherine Mansfield, whose strange, brave spirit and achievement have stormed the buttresses of criticism, Mrs. Hannah commented on the

luminating clarity, economy of words, artistic austerity, and startling realism of some single etched episode or adventure; of a quality that is the admiration and despair of literary tyro.

IN New York, it was interesting to hear, repertory has done, and is doing, great work; and Mrs. Hannah hopes to study there the drama so dear to her heart, and of which

Novelties

Oilcloth Hats.

THE American cloth which is so popular for stage costumes is now being used for hats, in the form of little flowers with petals made from strips of this material glued to a coloured centre. The flower toques now in vogue are most effective when made from masses of tiny oilcloth violets,

marigolds, or daisies, and the varnished material is more durable than the fine silks and, muslins used for the ordinary artificial blooms. American cloth is also used to make a crown of laurel leaves for a picture hat of crinoline straw, and a posy of flowers with shiny leaves is placed on the brim.

Stainless Steel.

HOUSEWIVES who pride themselves on the appearance of their kitchen will welcome the new stainless steel utensils. Nearly all kitchen arti-

cles will soon be obtainable in this metal, which requires little cleaning to keep its gleaming surface. Sauce-pans, fish-kettles, and preserving pans are made with double metal additions at points which come into contact with direct heat. Jugs, entree dishes, and trays are all now made in stainless steel, which is durable and suitable for table use.

Sandwich Boxes.

THE packing of a picnic basket so that the food is kept dry, clean,

and cool is an acute problem in summer time. The new sandwich boxes, made of thin aluminium, are light in weight and ideal for such occasions, and they will be found more satisfactory than the usual wrappings of grease-proof paper. They are fitted with adjustable divisions, so that different varieties of sandwiches can be kept apart. The lids can be removed, and thus they are easy to clean. These boxes can also be used for many other purposes.

Next Week's Features

Notes from 1YA

SUNDAY evening's church service will be relayed from the Pitt Street Methodist Church, the preacher being the Rev. Lionel Dalby.

Following the church service, vocal solos and duos will be rendered by the two talented Tauranga artists, Madame Cora Melvin and Mr. Norman Day. This will be the first appearance of these two artists since June last, when the station was fortunate enough to secure their services during the mid-winter school holidays. Mrs. and Mr. Day are again visiting Auckland, and the station has taken the opportunity of engaging them again for studio performances.

ON Tuesday evening Madame Humphrey Steward's Operatic Party will contribute a programme of Operatic arias selected from the most popular and well-known operas. Madame Humphrey Steward is well known in musical and teaching circles in Auckland, and on this occasion will be assisted by the brilliant Auckland harpist, Miss Mavis Grevatt. Also performing on this programme will be Mr. Frank Sutherland, whose resonant voice will be heard in a variety of grand opera selections. Elocutionary items will be rendered by Mr. Thomas Harris, who is now an established favourite among literary listeners. Instrumental numbers will be played by the studio orchestra, while the Majestic Theatre orchestra, under the direction of Mr. J. Whiteford Waugh, will be heard on relay from the Majestic Theatre, while the programme will be further enhanced with piano-

Burns Night at 1YA

ON the dramatic and elocutionary side, the Auckland Comedy Players will present Harold Chapin's one-act comedy "The Philosopher of Buttergins," which is full of delightful Scottish humour, and in which the parts will be taken by three of Auckland's most experienced performers—George Warren, J. F. Montague, and Mrs. Culford Bell. In addition to this, Mr. Montague will contribute two of Burns's poems: "My Love is Like a Red, Red Rose," and "A Man's a Man for a' That," and Mr. George Warren, "Bairnies," "Cuddle Doon" (Anderson).

RECORD—Burns Night at 1YA. 18PT.

forte solos contributed by Mr. Cyril Towsey.

"THE Maori—His Food," is the subject of Mr. A. B. Chappell's weekly talk on Tuesday evening.

"THE New Zealand Four"—Messrs. James Simpson, Roy Dormer, Eric Mannall and Duncan Black—will make their initial bow as a combination before the microphone on Wednesday evening. The concerted numbers will be "While I Have You," "Little Cotton Dolly" and "So Do I." Solos, "While I Have You" and "I Know of Two Bright Eyes" will be sung by Messrs. Simpson and Black respectively, and the same vocalists will contribute "The Twins," as a duet. Messrs. Dormer and Mannall will sing "Down the Vale." Mr. Dormer's solo will be "The Arrow and the Song." Elocutionary items to be given by Miss Maisie Cartelloyd will be a scene from "Within the Law," "Making up One's Mind" and "Married."

TWO organ recitals, each of twenty minutes' duration, will be given by Mr. Arthur E. Wilson from the Baptist

Tabernacle on Wednesday evening. He will play a wide variety of numbers and will be assisted by Mrs. C. E. Turley, whose vocal items will be "Let the Bright Seraphim" and "The Bells of Aberdovey," the latter being a very pretty Welsh air into which Mr. Wilson will introduce bell effects.

THE vocal portion of Thursday's musical programme will be provided by Madame Mary Towsey's Quartet, whose concerted numbers will be "Drink to me Only" and "The Last Rose of Summer." One of Madame's solo numbers will be "On the Banks of Allan Water." Miss Edna Peace is singing another Scottish number entitled "Douglas Gordon." Mr. John McDougall is singing "Land of Long Ago," and Mr. John Bree's solo contribution to the programme will be Pergolesi's "Tre Giorni." With Madame Mary Towsey, Mr. Bree will sing in the duet "I Would that My Love."

A feature of Thursday evening's programme will be a forty minute's debate, "Autocracy versus Democracy."

A vaudeville programme will precede the dance music session on Saturday evening. Contributing will be "The Snappy Three," whose opening vocal number will be "Anything to Make You Happy," a very appropriate item and giving the cue to the rest of the programme. Banjo duets will be played by Messrs. Higgott and Morrison. The Auckland Trio will contribute "Irish Pictures" and Godard's "Finale Trio in F." The gramophone records will include the humorous and catchy tuned "Song of the Prune," and the "Story of Lady Godiva," as told by John Henry and Blossom.

Notes from 2YA

MISS NORA GREEN, contralto, will contribute to Monday evening's programme. She is always a very acceptable artist. Her numbers on this occasion will be "The Little Waves of Baffny," "The Lake of Innisfree," "In Summer Fields," and "My Dearest Heart." Madame Emily Briggs, the talented mother of a talented daughter, Miss Jean Briggs (a regular 2YA artist), will sing "Secrecy," "The Post,"

and "The Lorely." The male voices will be those of Mr. Frank Skinner and Mr. S. E. Rodger, tenor and baritone respectively. The former will sing Quilter's setting of "Who is Sylvia?" and "Angels Guard Thee." Mr. Rodger will sing Blumenthal's "My Queen" and Hawley's "The Sweetest Flower that Blows." Elocutionary numbers will be given by Mr. Cedric Gardner.

AN Australian visitor who will be contributing to Monday evening's programme will be Miss Pauline Rodgers, of Sydney. She is a pianiste. The selections to be played by her will be selections from Brahms and Donizetti.

STATION 2YA is celebrating two anniversaries next week—that of the founding of Wellington province and that of Robert Burns's birthday.

The first falls on Tuesday, January 22, and the broadcast celebrations will commence at 2.30 p.m. with a relay from the Early Settlers' Hall, where the occasion is to be honoured by the Wellington Early Settlers' and Historical Association. This will be a very interesting programme.

In the evening many New Zealand items will be featured on the programme, these items being given by the Mellow Fellows. Included in the numbers will be tales of Hone Heke. Humorous sketches will be given by Mr. and Mrs. Albert Russell.

A special attraction on this programme will be the appearance of Miss Ethel Friend, a Sydney contralto now on a visit to New Zealand. Miss Friend is a vocalist with an Australian reputation. Her songs will be: "Annie Laurie," "Go Down to Kew in Lilac Time," and "The Early Morning."

On Thursday evening the Wellington Caledonian Society will celebrate the memory of Robert Burns. This will take place in the Caledonian Hall, and the whole of the proceedings will be relayed by 2YA.

FOR operatic night on Friday a programme of high merit has been arranged. Though the names of some of the best known of such works, both grand and light opera, appear on the programme, the entertainment is not entirely of an operatic nature, items of a miscellaneous nature will be introduced. The artists will be Mrs. Ellison Porter, Mrs. S. Kennedy, Mr. Edwin Dennis and Mr. McEvoy. There will be elocutionary numbers by Madame Eugenie Dennis. The orchestral programme includes the overture "William Tell," "Liebestraume," "Le Roi S'Amuse" and "Der Freischütz."

AN excellent programme has been arranged by the Melodie Four as their share of Saturday evening's vaudeville entertainment. The Melodie Four are, of course, always good. Other performers will be Mr. James McKenzie (novelty pianist) and Mr. W. McKeon (humorist). A diversified programme will be presented by the studio orchestra.

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Notes from 3YA

A VERY talented young artist from the West Coast, Miss Bertha Adkins, will make her first radio appearance on Monday evening. This young lady has been trained by the Sisters of the Greyhound Convent, and she has the distinction of being a Fellow of Trinity College, London. The songs chosen for Monday evening are the very pretty "Triskay Love Lilt" (one of the songs of the Hebrides), "Ships of Arcady," and "Lie There, My Love"—a trio of fine songs which will show the versatility of the young singer.

MR. ARTHUR COUCH, tenor, of Rapaki, who has several times sung for 3YA, will introduce Maori in the evening's programme. The first of his items, "Beneath Thy Window," will be sung in Maori. Afterwards will follow Alfred Hill's "Home, Little Maori Home." The third number will be "If I Might Come to You." Other singers on Monday evening will be Miss Rita Lucas (soprano) and Mr. Sydney Armstrong, both very acceptable artists. Humorous elocutionary numbers will be given by Mr. Jack Darragh.

THE instrumental music of the evening will be supplied by the Studio Trio and by the Woolston Brass Band under Mr. R. J. Estall. In view of the coming contest, the band is in splendid form, and the class of programme chosen is one of their best. A cornet solo will be played by Bandsman E. P. Dunn, with band accompaniment.

MISS SCOTT, chief assistant at Christchurch Public Library, is lecturing on books during the absence of Mr. E. J. Bell on leave. She speaks on Monday at 7.30 p.m.

MISS MERLE MILLER, the brilliant Lyttelton vocalist and pianiste, who has just returned from the Sydney Conservatorium, where she has had a distinguished career, will sing on Wednesday evening. Her numbers will be "Softly Awakes My Heart" (from Saint-Saens' "Samson and Delilah") and the "Gypsy Song" from "Carmen."

THE same evening (Wednesday) Mrs. Ross Brodie, of Rangitata, who sang so well at a recent Sunday evening concert, is appearing again. She will sing "Mignon," Massenet's "Elegie," and the pretty old Jacobite air, "The Skye Boat Song."

MR. L. C. QUANE, a very fine tenor singer whose rare appearances at 3YA are a great treat, will help further to make Wednesday's programme one of outstanding merit. On this occasion he will be associated with Mr. P. Angus, a fine baritone, and Miss Myra Edmonds, who will give songs at the piano. Miss Edmonds is a versatile performer, being an accomplished elocutionist as well as singer.

IN the miscellaneous programme which has been arranged for Thursday evening there will be found something to please all tastes. The vocalists will be Madame Gower Burns, Mrs. Ann Harper, Mr. Ernest Rogers, and Mr. J. Filer, who form the Grand Opera Quartet. One of the songs to be sung by Madame will be the celebrated "Valse Song" from "Romeo and Juliet." Elocutionary items of different types will be given by Miss

Winifred Smith, and a very interesting programme will be contributed by the Studio Orchestra under Mr. Harold Beck.

BURNS Night will be celebrated on Friday, when a Scottish concert will be followed by a dance music session. The vocalists will be the Radiolian Quartet, and the instrumental music will be provided by the Bailey-Marston Dance Orchestra.

ON Saturday evening the "Gypsy Troubadours" will present a vaudeville programme, two hours of uninterrupted enjoyment. This will be similar to the entertainment which was given by the Gypsy Troubadours on Saturday, January 12.

Notes from 4YA

THE REV. A. WALLACE will be the preacher at the Hanover Street Baptist Church when the service in the evening is broadcast next Sunday. Following this, if the weather is suitable, a band concert from St. Kilda will be relayed.

A POPULAR programme of band music by the St. Kilda Band, under Mr. J. Dixon, will be heard on Tuesday evening, and this will be the last concert given by the band until after the contest in February. Among the items to be heard will be "The Washington Greys March," the contest Test selection, "Lorenzo" (Keightley), a humoresque, "A Coster's Courtship" and the march "Prince of Smiles." Several artists will assist the band, including Mr. Albert Bicknell, who will sing "Cloths of Heaven" (Dunhill) and Pergolesi's "Mina."

THE Serenaders Quartet will again be on the air on Wednesday night, with a group of old favourite negro plantation melodies, "Darling Nellie Gray," "Uncle Ned," and "Kingdom Coming." Miss Mae Matheson (soprano), Miss Dorothy Allan (contralto), Mr. W. Harrison (tenor) and Mr. R. B. MacDonald (baritone) will each contribute vocal solos, and Miss Rona Scott will recite two of C. J. Dennis's popular poems, "The Play" and "Ma." The 4YA Broadcasting Trio will render some instrumental numbers.

FRIDAY'S programme will be provided by excellent talent. Miss Dorothy Skinner (contralto) will sing three works by modern composers. Miss Dorothy Sligo (mezzo-soprano) will sing, among other numbers, Peel's "Go Down to Kew in Lilac Time." Mr. Neil Black, the well-known basso, will render Pontet's beautiful Scottish ballad, "The Last Milestone." "La Dernier Rendezvous" (Rebitkow) will be played on the piano by Miss Aileen Young.

ON Saturday evening a special programme commemorating the Burns Anniversary will be broadcast.

Some Descriptive Notes

ROMANCE and black magic mingle in the plot of Weber's Opera, Der Freischutz ("The Marksman"), the overture from which is to be played at 1YA on Wednesday evening. It is all about a young forester's love and his rival's machinations. An import-

ant part is played by magic bullets, which are cast at midnight amid the terrors of a haunted glen. The melodies in the overture come from the body of the work, so some of them are tender and some gloomy and menacing. All alike show Weber's skill in making excellent tunes that, once heard, are easily remembered.

At 1YA on Thursday evening Mr. John Bree, baritone, is to sing "The Giorni" by the Italian composer, Pergolesi. Another song of the same composer "Mina," is to be sung at 4YA on Tuesday evening by Mr. Bicknell. Pergolesi lived up to the tradition of genius by dying of consumption at the age of twenty-six, so poor that every stick he possessed had to be sold to realise the cost of his funeral. During this brief lifetime he wrote a dozen or more operas, in addition to cantatas, instrumental music, and sacred music (of which the Stabat Mater is one of the few that have survived with any distinction). Most of his longer operas have gone the way of all flesh. The most famous of them was L'Olimpiade, during the performance of which in Rome in 1735 an orange was thrown with good aim at the composer's head.

Grieg wrote but one pianoforte concerto, which is probably the most popular of all his instrumental works. Per gramophone records, this concerto will be reproduced at 2YA on Friday, January 25, at 1YA on Sunday, January 27. The recording artist is the great pianist, Ignaz Friedman, and a finer rendition it is not possible to imagine. The concerto was composed by Grieg when he was in his 25th year while he was spending a summer holiday in Denmark. It has all the freshness and romantic charm of a youthful work.

Through the medium of gramophone records Mr. Arthur Cortot (pianist) and the London Symphony Orchestra will play the Second and Third Movements of Schumann's "Concerto in A Minor Op. 54" at 3YA on Thursday, January 24. The first movement of Schumann's Piano Concerto was composed in 1841, the year following his marriage with Clara Wieck. It is written in free form, and the composer intended at first to publish it as an Allegro for piano and orchestra under the title of Fantasia. The other two movements were added and finally completed in 1845. The Concerto ranks as one of the finest of Schumann's compositions. The Concerto was first performed by

Madame Schumann while touring on the Continent in 1845-6. Two movements, the Intermezzo and the Allegro Vivace will be presented by 3YA.

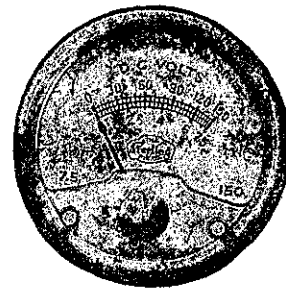
THE tone poem "Danse Macabre," or "The Dance of Death," by Saint-Saens, will be an orchestral number at 3YA on Thursday. The weird legend of the piece is familiar to most listeners. The composer gives a vivid representation of Death fiddling for the midnight capers of skeletons. Their bones knock together as the xylophone tells us. The dance goes on until cock-crow disperses the ghostly crew.

THE "Skye Boat Song," which is to be sung by Mrs. Ross Brodie at 3YA on Wednesday evening, dates back to the time when Charles Stuart, "Bonnie Prince Charlie," endeavoured to secure the throne of England and Scotland. With almost fanatical zeal the Highlanders had flocked to his standard and died in thousands on Culloden field. After the battle, Prince Charlie and his followers were hunted through the glens, but though a price of £30,000 was put on the prince's head, not a Highlander attempted to betray him. At length he and his little party reached the coast of the mainland opposite the isle of Skye. The sea was very rough. The English pursuers were close at hand. The fugitives embarked on a little boat, it was pushed off from the beach, and the long row started. The English soldiers reached the shore, looked at the angry sky and the tossing waves, and the little boat was able to reach Skye without being pursued.

Testing of 2YA

THE tests which are being held in connection with the two systems of control at 2YA will conclude on Thursday, January 31. The schedule for the remaining period will be:—

Friday, January 25—Master Oscillator Tube.
Saturday, January 26—Crystal.
Sunday, January 27—Master Oscillator Tube.
Monday, January 28—Crystal.
Tuesday, January 29—Master Oscillator Tube.
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Full Programmes for Next

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Sunday, January 20

1YA, AUCKLAND (333 METRES)—SUNDAY, JANUARY 20.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Further studio items.
 4.30: Close down.
 6.0: Children's hour—conducted by Uncle Leo.
 6.55: Relay from Pitt Street Methodist Church of evening service (Preacher, Rev. Lionel Dalby; organist, Mr. R. B. Bickerton; choirmaster, Mr. W. Leather).
 8.30: Orchestral—"Lilac Time" (Schubert) (Columbia Record 02609).
 8.38: Baritone solo—Mr. Norman Day, "King Charles" (White).
 8.42: Pianoforte solo—"Rosamunde Ballet Music" (Schubert) (Columbia Record 04172).
 8.46: Vocal duet—Mr. Norman Day and Madame Cora Melvin, "A May Morning" (Denza).
 8.50: Orchestral—"In a Monastery Garden" (Ketelby) (Columbia Record 02688).
 8.58: Soprano solos—Madame Cora Melvin, (a) "Will o' the Wisp" (Spross); (b) "Sing, Joyous Bird" (Phillips).
 9.3: Weather forecast and announcements.
 9.5: Trio and chorus—"Toreador's Song" from "Carmen" (Bizet) (Columbia Record 04173).
 9.9: Pianoforte solo—"Liebestraume" (Liszt) (Columbia Record 04097).
 9.13: Baritone solo—Mr. Norman Day, "Lindy" Spross).
 9.17: Orchestral—"In a Fairy Realm" (Ketelby) (Columbia Record 02694).
 9.25: Vocal duet—Mr. Norman Day and Madame Cora Melvin, "For You Alone" (Geell).
 9.30: God Save the King.

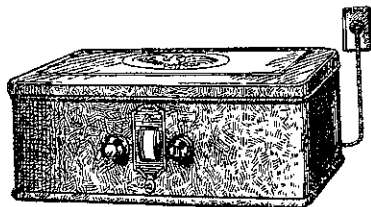
2YA, WELLINGTON (420 METRES)—SUNDAY, JANUARY 20.

- 3 p.m.: Selected gramophone items.
 4.30: Close down.
 6.0: Children's song service conducted by Uncle George, assisted by St. Matthew's Sunday School Choir.
 8.0: Relay of evening service from St. John's Presbyterian Church (Preacher, Rev. J. R. Blanchard, B.A.; organist and choirmaster, Mr. C. W. Kerry).
 8.15 (approx.): Studio concert.
 Prelude—London Symphony Orchestra, "Prelude to 'Lohengrin'" (Wagner) (H.M.V. Record D1258).

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- Baritone solo—Mr. Charles Clark, "The Glory of the Sea" (Sanderson).
 Violin solo—Albert Sammons, "Londonderry Air" (Columbia Record 03525).
 Mezzo-soprano solo—Miss Ngaire Coster, "What a Wonderful World It Would be" (Lohr).
 Choral—Royal Philharmonic Society of Sydney, "Thanks Be to God," from "Elijah" (Mendelssohn) (Columbia Record 02532).
 Soprano solo—Miss Eileen Kimbell, "Lord of Our Chosen Race," from "Ivanhoe" (Sullivan).
 String quartet—Elman String Quartet, "Quartet in A Minor" (Schubert) (H.M.V. Record DB652).
 Contralto solo with 'cello obbligato—Sophie Braslau, "Yohrzeit" (Sibberta) (H.M.V. Record DB164).
 March—Symphony Orchestra and Chorus, Act 4, "Carmen" (H.M.V. Record D1047).
 Tenor solo—Browning Mummery, "Now Sleeps the Crimson Petal" (Quilter) (H.M.V. Record B2355).
 Mezzo-soprano solo—Miss Ngaire Coster, "Lullaby" (Brahms).
 Choral—Royal Philharmonic Society of Sydney, "O Gladsome Light" (Sullivan) (Columbia Record 02532).
 Baritone solos—Mr. Charles Clark, (a) "Melisande in the Wood" (Goetz); (b) "Parted" (Tosti).
 Pianoforte solo—Ponishnoff, "Caprice in G Major" (Paderewski) (Columbia Record 03527).
 Soprano solos—Miss Eileen Kimbell, (a) "Swift the Hours" (Mabey); (b) "A Memory" (Park).
 Trio—Caruso, Journet and Scotti, "Duel Scene" from "Faust" (Gounod) (H.M.V. Record D0100).
 Band—Band of H.M. Coldstream Guards, "Conqueror March" (Ord Hume) (H.M.V. Record B1447).
 God Save the King.

3YA, CHRISTCHURCH (306 METRES)—SUNDAY, JANUARY 20.

- 3 p.m. Afternoon session—Gramophone recital (electrically reproduced).
 4.30: Close down.
 5.30: Children's song service.
 6.15: Hymn Chimes.
 6.30: Gramophone recital (electrically reproduced).
 7.0: Relay of evening service from Holy Trinity Church, Avonside (Preacher, Rev. O. Fitzgerald; organist, Mr. Arthur Lilley, A.R.C.O.).
 8.15 (approx.): Studio programme:
 Overture—Columbia Symphony Orchestra, "Poet and Peasant" (Suppe) (Columbia Record 02618).
 8.23: Mezzo-soprano solos—Mrs. G. L. Bull, (a) "In the Dusk" (Tate); (b) "All Roads Lead Home" (Tate).
 8.27: Organ solo G. T. Pattman, "Humoresque" (Dvorak) (Columbia Record 02686).
 8.35: Contralto solo—Miss Elizabeth Vass, "Out on the Rocks" (Sainton Dolby).
 8.39: String quartet—Lener String Quartet, "Quartet in D—Andante Cantabile" (Tschaiikowsky) (Columbia Record L1803).
 8.47: Mezzo-soprano solos—Mrs. G. L. Bull, (a) "Oh, But I Express in Song" (Malashkin); (b) "Stay With Me, Summer" (Morris).
 8.53: Violin solo—Jascha Heifetz, "Ave Maria" (Schubert) (H.M.V. Record DB283).
 9.1: Contralto solos—Miss Elizabeth Vass, (a) "Beloved, Sleep" (Slater); (b) "Homeland" (Drummond).
 9.5: Selection—Band of H.M. Grenadier Guards, "Nearer My God, to Thee" (Dykes) (Columbia Record 0967).
 9.8: Tenor solo—Turner Layton, "Were You There?" (negro spiritual) (Columbia Record 1248).
 Vocal duet—Layton and Johnson, "Ev'ry Time I Feel the Spirit" (negro spiritual) (Columbia Record 1248).
 9.13: Selection—Chicago Symphony Orchestra, "Valse Triste" (Sibelius) (H.M.V. Record BD5).
 9.17: Chorus—Opera Comique, Paris, "Opening Chorus from 'Cavalleria Rusticana'" (Mascagni) (Parlophone Record A4028).
 9.21: 'Cello solo—"Slumber Song" (Squire) (Columbia Record L1759).
 9.25: Baritone solo—Fraser Gange, "Slumber On, My Little Gipsy Sweetheart" (Columbia Record 02574).
 9.29: March—Royal Opera Orchestra, "Marche Militaire" (Schubert) (H.M.V. Record C1279).
 9.33: God Save the King.

4YA DUNEDIN (463 METRES)—SUNDAY, JANUARY 20.

- 5.30 p.m.: Children's song service, conducted by Big Brother Bill.
 6.30: Relay of service from Hanover Street Baptist Church.
 Preacher: Rev. A. H. Wallace.
 Organist: Mr. P. U. Harvey.
 7.40: (approx.): Organ recital by Mr. P. U. Harvey.

Week-all Stations-to Jan. 27

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- 8.0: Relay from St. Kilda (weather permitting) of concert by the St. Kilda Band.
9.15: Weather forecast and announcements.
9.17: God Save the King.

Monday, January 21

1YA, AUCKLAND (333 METRES)—MONDAY, JANUARY 21.

SILENT DAY.

2YA, WELLINGTON (420 METRES)—MONDAY, JANUARY 21.

- 3 p.m.: Chimes of the G.P.O. clock.
3.1: Selected gramophone items.
4.30 and 4.55: Sporting results to hand.
5.0: Close down.
6.0: Children's hour conducted by Uncle Jeff and Aunt Gwen.
7.0: News session, market reports and sporting results.
7.40: Lecturette—Mr. Hare Hongi, "Maori Language and Pronunciation."
8.0: Chimes of the G.P.O. clock, Wellington.
8.1: Overture—The Orchestra, "Norma" (Bellini).
8.11: Soprano solo—Madame Emily Briggs, "The Lorely" (Liszt).
8.15: Pianoforte solos—Miss Pauline Rogers, of Sydney, (a) "Rhapsody in G Minor" (Brahms); (b) "Andante and Finale" from "Lucia di Lammermoor" (for left hand only) (Donizetti).
8.22: Baritone solo—Mr. S. E. Rodger, "My Queen" (Blumenthal).
8.26: Violin with orchestra—"Sigmund's Liebeslied" (Wagner).
The Orchestra—"Valse Caprice" (Rubinstein).
8.35: Elocutionary—Mr. Cedric Gardner, "The Cautious Cashier" (Thomas).
8.42: Contralto solos—Miss Nora Greene, (a) "The Little Waves of Baffin"; (b) "The Lake of Innisfree."
8.47: 'Cello solo—Gaspar Cassado, "Melodie Arabe" (Glazounov) (Columbia Record 03579).
8.51: Tenor solo—Mr. Frank Skinner, "Who is Sylvia?" (Quilter).
8.55: The Orchestra—Repeat item.
9.3: Weather forecast and announcements.
9.5: Choir—Don Cossacks Choir, "Monotonously Rings the Little Bell" (Russian Folk Song) (Columbia Record 9085).
9.13: Soprano solos—Madame Emily Briggs, (a) "Secrecy" (Wolf); (b) "The Post" (Schubert).
9.19: Symphony—The Orchestra, "Symphony in G Minor" (Mozart).
9.31: Baritone solo—Mr. S. E. Rodger, "The Sweetest Flower that Blows" (Hawley).
9.35: Organ solo—G. T. Pattman, "Humoresque" (Dvorak) (Columbia Record 02636).
9.39: Elocutionary—Mr. Cedric Gardner, "Thrill" (Graham).
9.46: Contralto solos—Miss Nora Greene, (a) "In Summer Fields" (Brahms); (b) "My Dearest Heart" (Sullivan).
9.51: Tenor solo—Mr. Frank Skinner, "Angels Guard Thee" (Godard).
9.55: Vocal solo and chorus—Raymond Newell and Chorus, "We're All Bound to Go" (Terry) (Columbia Record 01024).
9.58: Dance suite—The Orchestra, "Nell Gwynne Dances" (German).
10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—MONDAY, JANUARY 21.

- 3 p.m.: Afternoon session—Gramophone recital.
4.25: Sports results.
4.30: Close down.
6.0: Children's hour conducted by Scatterjoy.
7.15: News session.
7.30: Book review by Miss Scott.
8.0: Chimes.
Band programme by the Woolston Brass Band under the conductorship of Mr. R. J. Estall, assisted by 3YA artists.
8.1: March—The Band, "Schumandinski" (Novivishic).
Waltz—The Band, "Micardanza" (Clarke).
8.10: Mezzo-soprano solos—Miss Rita Lucas, (a) "O Fiddler, Come Play for Me" (Phillips); (b) "Dreamland Rose" (Phillips).
8.16: Instrumental trio—Christchurch Broadcasting Trio, "Rondo, Op. 85" (Reissiger).
8.25: Tenor solo—Mr. Arthur Couch, "Beneath Thy Window" (in Maori) (Teschmacher).
8.29: Male quartet—The Rounders, "Chlo-e" (Song of the Swamp) (Kahn-Moret) (H.M.V. Record EA402).
8.33: Contralto solo—Miss Bertha Adkins, "Eriskay Love Lilt" (Hebridean Song) (Kennedy-Fraser).
8.37: Selection—The Band, "Old Melody" (M.S.).
8.49: Wireless Ripples—Mr. Jack Darragh, "Cohen Buys a Wireless Set."

- 8.53: Baritone solos—Mr. Sydney Armstrong, (a) "Youth" (Allitsen); (b) "Cloze Props" (Wolseley).
8.58: Cornet solo with band accompaniment—Soloist, E. P. Dunn, "Andantino" (Lemare).
9.3: Weather forecast and announcements.
9.4: Chorus with Orchestra—Sullivan Light Opera Company, "Gems from 'The Mikado'" (Sullivan) (H.M.V. Record EB5).
9.8: Soprano solos—Miss Rita Lucas, (a) "Sleepy Hollow Tune" (Kountz); (b) "Love's Whispers" (Kountz).
9.13: Instrumental trios—Christchurch Broadcasting Trio, (a) "Salut d'Amour" (Elgar); (b) "Danse Hongroise" (Berlioz).
9.20: Tenor solos—Mr. Arthur Couch, (a) "Home, Little Maori, Home" (Hill); (b) "If I Might Come to You" (Squire).
9.25: Cornet solo—The Band, "Distant Voices" (Rimmer).
Fox-trot—The Band, "Counting the Days" (Tobias).
9.35: Contralto solos—Miss Bertha Adkins, (a) "Ships of Arcady" (Head); (b) "Lay There, My Love" (McCunn).
9.39: Vocal trio—Dalhart, Robison, and Hood, "Climbin' Up De Golden Stairs" (H.M.V. Record EA382).
9.43: Humour—Mr. Jack Darragh, "Levinsky's Wedding."
9.48: Baritone solo—Mr. Sydney Armstrong, "There's a Song Down Every Roadway" (Haydn Wood).
9.52: Dance—The Band, "Harvest Moon" (Rimmer).
March—The Band, "The Great Little Army" (Alford).
God Save the King.

4YA, DUNEDIN (463 METRES)—MONDAY, JANUARY 21.

SILENT DAY.

Tuesday, January 22

1YA, AUCKLAND (333 METRES)—TUESDAY, JANUARY 22.

- 3 p.m.: Afternoon session—Selected studio items.
4.0: Literary selection by the Announcer.
4.8: Further studio items.
4.25: Sports results to hand.
4.30: Close down.
6.0: Children's session, conducted by Uncle George.
7.0: Close down.
7.15: News and market reports; book review.
7.45: Close down.
8.0: Chimes.
8.1: Overture—The Orchestra, "Zampa" (Harold).
8.11: Vocal quartet—Madame Humphrey Steward's Quartet, "The Cherubie Host" (Gaul).
8.15: Grand organ—Arthur Meale, "Blue Danube Waltz" (Strauss), H.M.V. record B2695).
8.19: Soprano—Miss Doris More, "Far Away Lies a Land" ("Mignon"), (Thomas).
8.23: Relay—Majestic Theatre Orchestra, under Mr. Whiteford Waugh, musical entr'acte.
8.32: Baritone—Mr. Walter Brough, "Even Bravest Hearts" ("Faust"), (Gounod).
8.36: Piano—Mr. Cyril Towsey, "Nocturne in F Sharp Minor" (Chopin).
8.41: Elocution—Mr. Thomas Harris, "Eugene Aram" (Hood).
8.48: Soprano—Madame Humphrey Steward, "Indian Love Call" ("Rose Marie"), (Friml).
8.52: Ballet music—The Orchestra, "Carmen Ballet Music" (Bizet).
9.2: Evening forecast and announcements.
9.4: Contralto—Miss Doris Gower, "Softly Awakes My Heart" ("Samson and Delilah") (Saint-Saens).
9.9: Relay—Majestic Theatre, vocal entr'acte.
9.17: Baritone—Mr. Walter Brough, (a) "Eri Tu" ("Masked Ball"), (Verdi); (b) "Star of Eve" ("Tannhauser"), (Wagner).
9.21: Harp—Miss Mavis Grevatt, "La Harpe Aeolienne" (Godefroid).
9.26: Elocution—Mr. Thomas Harris, "Me and Jim."
9.34: 'Cello and orchestral—The Orchestra, (a) "Melodie Arabe" (Glazounov); (b) "Village Dance" (Glazounov).
9.42: Soprano—Miss Greta Munro, "When a Merry Maiden Marries" ("Mikado"), (Sullivan).
9.46: Piano duet—Misses Vera Harding and Gwen Williams, "March Militaire, No. 3" (Schubert).

- 9.50: Vocal duet—Misses Stevens, selected.
 9.54: Musical comedy selection—The Orchestra, "Chocolate Soldier" (Strauss).
 10.0: God Save the King.

2YA, WELLINGTON (420 METRES)—TUESDAY, JANUARY 22.

- 2.30 p.m.: Relay from Early Settlers' Hall of Anniversary Celebrations of the Wellington Early Settlers' and Historical Association.
 5.0: Close down.
 6.0: Children's hour, conducted by Cousin Jim.
 7.0: News session, market reports and sporting results.
 7.40: Lecturette by representative of Department of Agriculture, "For the Man on the Land."
 8.0: Chimes of the G.P.O. Clock.
 8.1: March—The Orchestra, "Stars and Stripes" (Souza).
 Waltz—The Orchestra, "Ball Scene" (Nicodi).
 8.9: Contralto solos—Miss Ethel Friend, (a) "Annie Laurie" (Arranged Lehman); (b) "Go Down to Kew in Lilac Time" (Peel); (c) "The Early Morning" (Peel).
 8.19: Chorus—The Mellow Fellows, "Dear Old New Zealand" (Beck).
 8.23: Suite—The Orchestra, "Pagoda of Flowers" (Woodforde-Finden). 1. Passing of Priests. 2. Midst the Petals. 3. The Star Flower Tree. 4. Blue Lotus Tree. 5. Return of Oomah.
 8.33: Tenor solo—The Tenor Fellow, "Why Do I Always Remember?" (Gunsky).
 8.37: Soubrette—Miss Marjorie Buckeridge, "Maud" (Westlake).
 8.41: Hawaiian Instrumental—Berthold and Bent, (a) "Hilo March" (Pall); (b) "Kailima Waltz" (Awai).
 8.48: Humour and Musical Sketch—Mr. and Mrs. Albert Russell, (a) "Moving the Piano" (David); (b) "First and Third" from "Gay Parisienne."
 8.55: Orchestra—Repeat Item.
 9.3: Weather report and announcements.
 9.4: War Cry—The Bass Fellow, "Kamate" (Hikiroa).
 9.8: Harmony—The Mellow Fellows, (a) "Pokarekare"; (b) "Longing" (Murdoch).
 9.14: Orchestra—(a) "Waiata Poi" (Hill); (b) "La Paloma" (Yradier).
 9.22: Baritone—The Baritone Fellow, "Don't Forget the Old Folks" (Darewski).
 9.26: Steel Guitar Duo—Berthold and Bent, "Honolulu Moon" (Laurence); (b) "Blue Skies" (Berlin).
 9.33: Soubrette—Miss Marjorie Buckeridge, "Constantinople" (Carlton).
 9.37: Stories—One of the Fellows, "Hone Heke Tales."
 9.41: Saxophone solo—Rudy Wiedoft, "La Cinquantaine" (arranged Wiedoft) (Columbia record 4037).
 9.45: Humour—Mr. and Mrs. Albert Russell, (a) "My Ninepence" (Lee); (b) "Aba Daba Honeymoon" (Berlin).
 9.52: Song and Chorus—The Mellow Fellows, "I've Lost My Heart in Maori-land."
 9.56: Musical Comedy Selection—The Orchestra, "Gipsy Princess" (Kalman).
 10.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—TUESDAY, JANUARY 22.

(SILENT DAY)

4YA, DUNEDIN (463 METRES)—TUESDAY, JANUARY 22.

- 8.0 p.m.: Town Hall Chimes.
 8.1: Gramophone concert.
 4.25: Sporting results.
 4.30: Close down.
 6.0: Chimes.
 6.1: Children's hour—Big Brother Bill.
 7.15: News session.
 8.0: Town Hall Chimes. Concert by St. Kilda Band, under the conductorship of Mr. James Dixon and items by assisting artists.
 8.1: March—The Band, "Washington Greys" (Grafulla).
 8.5: Waltz—The Band, "Embers" (L'estrangere).
 8.13: Baritone solos—Mr. Albert Bicknell, (a) "Cloths of Heaven" (Dunhill); (b) "Sea Fever" (Ireland).
 8.20: Violin solo—Sascha Jacobsen, "One Alone" from "The Desert Song" (Romberg) (Columbia record 01123).
 8.24: Male Voice Choir—Sheffield Orpheus Choir, "There is a Tavern in the Town" (Trdl.) (Columbia record 01175).
 8.28: Contralto solo—Miss Wyn McPeak, "Bird of Blue" (German).
 8.31: Intermezzo—The Band, "Reverie in B Flat" (Powell).
 8.38: Recital—Miss Roberta Williams, "The Norman Baron" (Longfellow).
 8.43: Soprano and tenor duet with harp and orchestra—Anita Atwater and Luis Sanchez, "Colonial Song" (A Song of Australia) (Grainger) (Columbia record 03592).
 8.51: Bass solos—Mr. J. McNaughton, (a) "The Skipper" (Jude); (b) "The Memory of a Song" (Nicholls).
 8.58: Soprano and male quartet—Norah Blaney and the Ramblers, "Sweet Suzanne" (Columbia record 01170).
 Whispering solo with violin—Jack Lumsdaine, "Like a Bird That's on the Wing" (Columbia record 01185).
 9.2: Weather forecast and announcements.
 9.4: Male Quintet—The Singing Sophomores, "My Ohio Home" (Donaldson and Kahn) (Columbia record 01088).

- 9.8: Waltz—The Band, "Jeannie" (Shilkret).
 9.13: Tone Poem—The Band, "Lorenzo" (Keightley).
 9.25: Baritone solo—Mr. Albert Bicknell, "Mina" (Pergolesi).
 9.28: Comedian—Will Fyffe, "The Engineer" (Fyffe) (Columbia record 9108).
 9.32: Contralto solos—Miss Wyn McPeak, (a) "The Opal" (Carse); (b) "The Amber and the Amethyst" (Carse).
 9.38: Cornet solo with band accompaniment, "Somewhere a Voice is Calling" (Tate).
 9.42: Humorous recitals—Miss Roberta Williams, (a) "Oh"; (b) "In the Rain."
 9.48: Cello solo—W. H. Squire, "Drink to Me Only with Thine Eyes" (arranged Squire) (Columbia record 04180).
 9.52: Bass solo—Mr. J. McNaughton, "Harlequin" (Sanderson).
 9.55: Humoresque—The Band, "Coster's Courtship" (Mackenzie).
 10.2: Vocal solo—Vaughan de Leath, "I Just Roll Along" (De Rose and Trent) (Columbia record 01136).
 10.6: March—The Band, "Prince of Smiles" (Louka).
 10.10: God Save the King.

Wednesday, January 23

1YA, AUCKLAND (333 METRES)—WEDNESDAY, JANUARY 23.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Further studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's hour—conducted by Hobo.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Military Band—H.M. Coldstream Guards Band, "Selections from 'H.M.S. Pinafore'" (Sullivan) (H.M.V. Record C1283).
 8.9: Vocal quartet—The New Zealand Four, "While I Have You" (Parks).
 8.13: Tenor solo—Mr. James Simpson, "Rosamund" (Foster).
 8.17: Elocution—Miss Maisie Carte-Lloyd, Scene from "Within the Law."
 8.25: Organ and vocal—Mr. Arthur E. Wilson, (a) "Minuetto Pomposo" (Harris), (b) "Chanson Pastorale" (Harris).
 Soprano solos—Mrs. C. E. Turley, (a) "Let the Bright Seraphim" (Hansel), (b) "Gondola Song" (Lohr).
 8.45: Bass solo—Mr. Duncan Black, "I Know of Two Bright Eyes" (Clutsam).
 8.49: Vocal duet—Messrs. Roy Dormer and Eric Mannall, "Down the Vale" (Mohr).
 8.53: Medley—Savoy Orpheans, "Round the World Medley" (arr. Somers) (H.M.V. Record C1223).
 9.1: Weather forecast and announcements.
 9.4: Vocal quartet—The New Zealand Four, "Little Cotton Dolly" (Geibel).
 9.12: Military Band—H.M. Coldstream Guards Band, "Der Freischutz" (Weber) (H.M.V. Record C1335).
 9.16: Vocal duet—Messrs. Simpson and Black, "The Twins" (Slaughter).
 9.20: Organ solos—Mr. Arthur E. Wilson, (a) "Air Du La Roi Louis XIII." (Ghys); (b) "In Summer" (Schumann).
 Soprano solos—Mrs. C. E. Turley, (a) "The Bells of Aberdovey" (Welsh Air); (b) "Fanfare" (Lemmens).
 9.40: Tenor solo—Mr. Roy Dormer, "The Arrow and the Song" (Balfe).
 9.44: Elocution—Miss Maisie Carte-Lloyd, (a) "Making Up One's Mind"; (b) "Married."
 9.52: Military Band—National Military Band, "Christchurch Chimes" (arr. Hare) (Zonophone Record 5119).
 9.56: Vocal quartet—The New Zealand Four, "So Do I!"
 10.0: God Save the King.

2YA, WELLINGTON (420 METRES)—WEDNESDAY, JANUARY 23,

SILENT DAY.

3YA, CHRISTCHURCH (306 METRES)—WEDNESDAY, JANUARY 23.

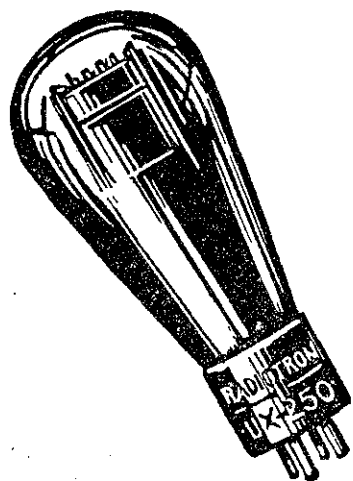
- 8 p.m.: Afternoon session—Gramophone recital.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour conducted by Big Brother.
 7.15: News session.
 7.30: Adding stock market reports.
 8.0: Chimes.
 8.1: Overture—Philadelphia Symphony Orchestra, "Casse Noisette" (Nutcracker Suite) (Tschaiakowsky) (H.M.V. Record D1214).
 8.9: Tenor solo—Mr. L. C. Quane, "N'Appari" from "Martha" (Flotow).
 8.13: Cello solo—Mr. Harold Beck, "Orientale" (Cesar Cui).
 8.17: Mezzo-soprano solo—Miss Merle Miller, "Softly Awakes My Heart," from "Samson and Delilah" (Saint-Saens).
 8.22: Pianoforte solo—Miss Maud K. Stout, "The Flatterer" (Chaminade).
 8.25: Baritone solo—Mr. P. Angus, "O Star of Eve" (Wagner).
 8.30: Instrumental trio—Christchurch Broadcasting Trio, "Allegro Appassionata" (Mendelssohn).
 8.40: Recital—Miss Myra Edmonds, "Song of the Market-Place."
 8.45: Waltz—Marek Weber and his Orchestra, "Wine, Women, and Song" (Strauss) (H.M.V. Record C1407).
 8.49: Contralto solo—Mrs. Ross Brodie, "Mignon" (Ambroise Thomas).
 8.53: Chorus—The Revellers, Gems from "Tip Toes" (Gershwin) (H.M.V. Record C1293).
 8.57: Weather forecast and announcements.



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WELLINGTON

- 8.59: Overture—New Light Symphony Orchestra, "The Merry Wives of Windsor" (Nicolai) (H.M.V. Record C1260).
 9.7: Tenor solos—Mr. L. C. Quane, (a) "At Parting" (Clarke); (b) "Good-Night, Good-Night, Beloved" (Balfe).
 9.14: Cello solo—Mr. Harold Beck, "Gavotte No. 2" (Popper).
 9.18: Mezzo-soprano solo—Miss Merle Miller, "The Gipsy Song" from "Carmen" (Bizet).
 9.22: Pianoforte solo—Miss Maud K. Stout, "Capriccio in E Major" (Scazzatti).
 9.26: Baritone solos—Mr. P. Angus, (a) "Love's Coronation" (Aylward); (b) "To Anthea" (Hatton).
 9.33: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cantabile" (Widor); (b) "Gavotte" (Sinding).
 9.41: Recital to piano accompaniment—Miss Myra Edmonds, "Lynette" (Shaw Mayer).
 9.45: Lancers—Bert Firman's Dance Orchestra, "Community Lancers" (arr. Stodden) (Zonophone Record 5117).
 9.50: Contralto solos—Mrs. Ross Brodie, (a) "Elegie" (Massenet); (b) "Skye Boat Song" (Lawson).
 9.57: Chorus—Light Opera Company, "Gems from 'Sunny'" (Kern) (H.M.V. Record C1293).
 10.1: Band—H.M. Coldstream Guards Band, "Martha" Selection (Flotow) (H.M.V. Record C1453).
 God Save the King.

4YA, DUNEDIN (463 METRES)—WEDNESDAY, JANUARY 23.

- 7 p.m.: Town Hall Chimes.
 7.1: Request gramophone concert.
 7.40: News session.
 8.0: Town Hall chimes.
 8.1: Band selection—H.M. Grenadier Guards Band, "The Meistersingers" (Wagner) (Columbia Record 02697).
 8.9: Quartet—The Serenaders, (a) "Uncle Ned" (Forster); (b) "Kingdom Coming."
 8.16: Cello solo—Mr. P. J. Palmer, "Largo" (Handel).
 8.21: Soprano solo—Miss Mae Matheson, "Annie Laurie."
 8.25: Orchestral—Philadelphia Symphony Orchestra, (a) "Dance of Death" (Saint-Saens); (b) "Danse Macabre" (Saint-Saens) (H.M.V. Record D1121).
 8.33: Baritone solo—Mr. R. B. Macdonald, "Beyond the Dawn" (Sanderson).
 8.36: Instrumental trio—4YA Broadcasting Trio, "Souvenir" (Drdla).
 8.41: Contralto solo—Miss Dorothy Allan, "Still as the Night" (Bohm).
 8.45: Recitals—Miss Rona Scott, (a) "Ma" (Dennis); (b) "Burglars in the House" (Cole).
 8.54: Tenor solo—Mr. W. Harrison, "Vorreil" (Tosti).
 8.57: Violin solo—Miss Eva Judd, "Valse Triste" (Sibelius).
 9.1: Weather forecast and announcements.
 9.3: Overture—Philadelphia Symphony Orchestra, "Rienzi" Overture (Wagner) (H.M.V. Records ED 3 and 4).
 9.11: Quartet—The Serenaders, "Darling Nelly Gray" (Hanby).
 9.14: Piano solo—Miss Aileen Young, "Tone Picture No. 4" (Grieg).
 9.18: Soprano solo—Miss Mae Matheson, "Give Thanks and Sing" (Harris).
 9.21: Orchestral—Victor Salon Orchestra, "Indian Love Call" from "Rose Marie" (Friml) (H.M.V. Record BA186).
 9.25: Baritone solo—Mr. R. B. Macdonald, "The Gay Highway" (Drummond).
 9.28: Instrumental trios—4YA Broadcasting Trio, (a) "Serenade" (Herbert); (b) "Hungarian Dance No. 7" (Brahms).
 9.38: Contralto solo—Miss Dorothy Allan, "Song of Autumn" (Elgar).
 9.41: Orchestral—New Light Symphony Orchestra, "A Hunt in the Black Forest" (Volker) (H.M.V. Record C1308).
 9.45: Recital—Miss Rona Scott, "The Play" (Dennis).
 9.50: Tenor solo—Mr. W. Harrison, "The Answer" (Robyn).
 9.53: Cello solo—Mr. P. J. Palmer, "Romance" (Saint-Saens).
 9.58: Military Band—H.M. Coldstream Guards Band, "Martha" Selection (Flotow) (H.M.V. Record C1453).
 10.6: God Save the King.

Thursday, January 24

1YA, AUCKLAND (333 METRES)—THURSDAY, JANUARY 24.

- 2 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Further studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's hour—conducted by Uncle Mack.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: March—Band of H.M. Coldstream Guards, "Colonel Bogey" (Alford) (H.M.V. Record B2408).
 8.9: Vocal Quartet—Madame Mary Towsey's Quartet, "Bring to Me Only" (Arr. Vincent).
 8.31: Baritone solo—Mr. John Bree, "Tre Giorni" (Pergolesi).
 8.17: Instrumental Trio—Auckland Trio, "Trio No. 1" (Haydn).
 8.25: Soprano solo—Madame Mary Towsey, "On the Banks of Allan Water."
 8.29: Humour—John Henry and Blossom, "The Stocking" (Henry and Reeve) (H.M.V. Record B2393).
 9.37: Tenor solo—Mr. John McDougall, "Land of the Long Ago" (Ray).
 8.41: Violin solo—Miss Ina Bosworth, "Humoresque" (Housen).
 8.45: Vocal duet—Madame Mary Towsey and Mr. J. Bree, "I Would That My Love" (Mendelssohn).

- 8.49: Orchestral—Philadelphia Symphony Orchestra, "Hungarian Rhapsody No. 2" (Liszt) (H.M.V. Record D1296).
 8.53: Contralto solo—Miss Edna Peace, "Douglas Gordon" (Old Scottish).
 9.3: Weather forecast and announcements.
 9.5: Debate—pro and con, "Autocracy Versus Democracy."
 9.45: Baritone solo—Mr. John Bree.
 9.49: Instrumental Trio—Auckland Trio, "Autumn and Winter" (Glazounov).
 9.57: Soprano solo—Madame Mary Towsey, "Vernorgenheit" (Wolf).
 10.1: Military Band—H.M. Coldstream Guards Band, "Martha Selection" (Flotow) (H.M.V. Record C1453).
 10.5: Vocal Quartet—Madame Towsey's Quartet, "The Last Rose of Summer" (Old English).
 10.8: God Save the King.

2YA WELLINGTON (420 METRES)—THURSDAY, JANUARY 24, 1929.

- 3.0 p.m.: Chimes of the General Post Office Clock, Wellington.
 3.1: Selected gramophone items.
 4.30: Sporting results.
 Selected gramophone items.
 4.55: Sporting results.
 5.0: Close down.
 6.0: Children's Hour.
 7.0: News session, market reports and sporting results.
 7.40: Lecturette—Colonel Robert Sandell, Salvation Army Headquarters, "Uncommon Common Places—Africa."
 8.0: Chimes of the General Post Office clock, Wellington.
 8.1: Relay from Caledonian Hall of concert arranged by the Wellington Caledonian Society in honour of Scotland's Poet—Robert Burns.
 10.15 (approx.): Close down.

3YA, CHRISTCHURCH (306 METRES)—THURSDAY, JANUARY 24.

- 3.0 p.m.: Afternoon session—gramophone recital.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour—conducted by Uncle Hal.
 7.15: News session.
 7.30: Talk on Wheat Topics by Mr. G. H. Holford, B. Agr.
 8.0: Chimes.
 8.1: Rebroadcast of overture by 2YA Orchestra (conditions permitting).
 8.7: Tenor solos—Mr. Ernest Rogers, (a) "Bird Songs at Eventide" (Coates); (b) "A Request" (Woodford-Finden).
 8.12: Soprano solos—Madame Gower Burns, (a) "Prelude" (Ronald); (b) "Valse Song" from "Romeo and Juliet" (Gounod).
 8.16: Pianoforte concerto—Alfred Cortot and London Symphony Orchestra, "Concerto in A Minor" Op. 54 (Intermezzo and Allegro Vivace) (Schumann) (H.M.V. Record DB1061-2).
 8.31: Orchestral suite—Studio Orchestra conducted by Mr. Harold Beck, "Gordian Knot" (Purcell).
 8.41: Contralto solos—Mrs. Ann Harper, (a) "Daffodils Are Here" (Ronald); (b) "Deserted" (McDowell).
 8.45: Italian baritone solos—Lawrence Tibbett, (a) "S Pao?" (A Word, Allow Me); (b) "Un Nido Di Memorie" (A song of tender memories) from "I Pagliacci" (Leoncavallo) (H.M.V. Record DB975).
 8.53: Soprano and contralto duet—Grand Opera Duo, "At Early Dawn" (John Ireland).
 8.57: Recitals—Miss Winifred Smith, (a) "Marguerite" (Whittier); (b) "Oh!"
 9.2: Tenor solo—Mr. Ernest Rogers, "Eleanore" (Coleridge-Taylor).
 9.5: Weather forecast.
 9.8: Orchestral items—Studio Orchestra, (a) "Barcarolle" (Offenbach) from "Tales of Hoffman"; (b) "Idyl" (Bainton) (flute soloist—Mr. W. Hay); (c) "Norwegian Dance No. 2" (Grieg).
 9.18: Soprano solo—Madame Gower Burns, "Come In" (Coleridge-Taylor).
 9.22: Mixed Chorus with orchestra—Ever-ready Hour Group, "Goin' Home" (Wm. Arves, Fisher) (Zonophone Record EF8).
 9.26: Bass solo—Mr. James Filer, "The Bosom of the Deep" (Johnson).
 9.34: Orchestral—Philadelphia Symphony Orchestra, (a) "Dance of Death" (Saint-Saens); (b) "Dance Macabre" (Saint-Saens) (H.M.V. Record D1121).
 9.42: Contralto solo—Mrs. Ann Harper, "Forest Echoes" (Phillips).
 9.46: Quartet—Galli-Curci, Homer, Gigli and De Luca, "Bella Figlia Dell'Amore" ("Fairer Daughter of the Graces") from "Rigoletto" (Verdi) (H.M.V. Record DQ102).
 9.50: Tenor and baritone duet—Grand Opera Duo, "Flow Gently Deva" (Parry).
 9.54: Touches of Life—Miss Winifred Smith, (a) "The Chimney Seat" (Hannequin); (b) "Cupid's Mistake" (Hannequin).
 9.59: Bass solo—Mr. James Filer, "Blow, Blow Thou Winter Wind" (Sargeant).
 10.3: Selections—Studio Orchestra, (a) "Valse from 'Coppelia'" (Delibes); (b) "Hero's March" (Mendelssohn).
 10.11: Quartet—Grand Opera Quartet, "An Evening Lullaby" (Shaw).
 God Save the King.

4YA DUNEDIN (463 METRES)—THURSDAY, JANUARY 24.

SILENT DAY.

Friday, January 25

1YA, AUCKLAND (333 METRES)—FRIDAY, JANUARY 25.

6 p.m.: Afternoon session—Selected studio items.

4.0: Literary selection by the Announcer.

4.8: Further studio items.

4.25: Sports results to hand.

4.30: Close down.

6.0: Children's hour, conducted by Nod.

7.15: News and market reports.

Special Burns anniversary programme.

8.0: Chimes.

8.1: Introductory talk—The Announcer, "Robert Burns."

8.6: Overture—The Orchestra, "London Scottish" (Haines).

8.12: Vocal quartet—The Clarion Quartet, "Annie Laurie."

8.16: Bagpipes—Piper Cameron, "Highland Fling."

8.20: Soprano solo—Miss Alma McGruer, "Comin' Thro' the Rye."

8.24: Scottish comedian—Sir Harry Lauder, "Tobermory" (Lauder) (H.M.V. Record D1229).

8.28: Vocal duet—Messrs. D. Black and J. Simpson, "Of a' the Airts the Wind can Blaw" (Old Scottish).

8.32: Suite—The Orchestra, "Keltic Suite," (a) The Clans, (b) The Lament, (c) The Call.

8.46: Elocutionary—Mr. J. F. Montague, (a) "A Red, Red Rosebud" (Burns); (b) "A Man's a Man for a' That" (Burns).

8.53: Contralto solo—Miss Beryl Smith, "My Heart is Sair" (Old Scottish).

8.57: Bagpipes—Argyle Reel and Strathspey Band, "Braemar" (eightsome reel) (Parlophone Record).

9.0: Weather forecast and announcements.

9.2: Chorus and orchestra—"Highland Laddie" (Scredy).

9.12: Tenor solo—Mr. James Simpson, "Afton Water" (Hume).

9.16: Scottish one-act comedy—The Auckland Comedy Players, under Mr. H. F. Montague, "The Philosopher of Butterbriggins" (Chapin).

9.41: Vocal duet—Miss McGruer and B. Smith, "O, Wert Thou in the Cauld Blast" (Mendelssohn).

9.45: Bagpipes—Piper Cameron, (a) "Cock o' the North"; (b) "Hielan' Laddie."

9.48: Bass solo—Mr. Duncan Black, "Scots Wha' Hae" (Old Scottish).

9.51: Elocutionary—Mr. George Warren, "Bairnies, Cuddle Doon."

9.53: Selection—The Orchestra, "Bonnie Blue Bonnets" (De Ville).

9.57: Vocal quartets with orchestra—The Clarion Quartet, (a) "There was a Lad" (Fraser); (b) "Auld Lang Syne."

10.1: God Save the King.

2YA, WELLINGTON (420 METRES)—FRIDAY, JANUARY 25.

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

3.1: Selected gramophone items.

4.30 and 4.55: Sporting results to hand.

5.0: Close down.

6.0: Children's hour, conducted by Big Brother Jack.

7.0: News session, market reports and sporting results.

7.40: Lecturette—Mr. D. McKenzie, "The Laws of Cricket."

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

8.1: Overture—The Orchestra, "William Tell" (Rossini).

8.14: Soprano solo—Mrs. Ellison Porter, "Musetta's Song" from "La Boheme" (Puccini).

8.18: Bass solo—Mr. McEvoy, "Star of Eve" (Wagner).

8.22: Violin solo with orchestra, "Andante Symphony Espagnola" (Lalo).
Orchestral—The Orchestra, "Liebestraume" (Liszt).

8.35: Elocution—Madame Eugenie Dennis, "Lorraine, Lorraine, Loree."

8.40: Pianoforte concerto—Ignaz Friedman, "Concerto in A Minor—2nd and 3rd Movements" (Grieg) (Columbia Records 02704/5).

8.53: Tenor solo—Mr. Edwin Dennis, "La Donna Mobile" from "Rigoletto" (Verdi).

8.57: Contralto solo—Mrs. S. Kennedy, "Cam Ye By Athol" (Traditional).

9.1: Weather report and announcements.

9.3: The Orchestra, Repeat Item.

9.10: Vocal duet—Mrs. Ellison Porter and Mr. Edwin Dennis, "Boy and Girl" from "The Vanity Girl" (Monckton).

9.14: Suite—The Orchestra, "Le Roi S'Amuse" (Delibes).

9.24: Bass solo—Mr. McEvoy, "When the Ebb Tide Flows" (Gordon).

9.28: Male quartet—Shannon Male Quartet, "The Sidewalks of New York" (Lawlor and Blake) (Regal Record G20298).

9.32: Soprano solo—Mrs. Ellison Porter, "Alice Blue Gown" (Kern).

9.36: Elocution—Madame Eugenie Dennis, "A Frenchman at the Telephone."

9.42: Saxophone solo—Andy Sannella, "Jack and Jill" (Sannella) (Columbia Record 01186).

9.46: Contralto solos—Mrs. S. Kennedy, (a) "The Rowan Tree"; (b) "The Auld Hoose" (Traditional).

9.53: Tenor solo—Mr. Edwin Dennis, "A Spirit Flower" (Tipton).

9.57: Grand opera selection—The Orchestra, "Der Freischutz" (Weber).

10.7: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—FRIDAY, JANUARY 25.

3 p.m.: Afternoon session—gramophone recital.

4.25: Sports session.

4.30: Close down.

6.0: Children's hour, conducted by Brother Bill.

7.15: News session.

8.0: Robert Burns programme—

8.1: Bagpipes—Argyle and Strathspey Band, "Braemar" (Eightsome Reel) (Parlophone Record).

8.9: Tenor solo and chorus—Mr. Gregory Russell and The Radiolians, "The Bonnie, Bonnie Banks of Loch Lomond" (Traditional).

Bass solo—Mr. W. J. Richards, "The Border Ballad" (Cowan).

8.17: Instrumental trio—Christchurch Broadcasting Trio, "Allegro and Finale" (Reinecke).

8.26: Soprano solo—Mrs. Claris Shaw, "Angus MacDonald."

Tenor solo—Mr. Gregory Russell, "Old Scottish" (Traditional).

8.33: Scottish humour—Will Fyffe, "Dr. McGregor" (Fyffe) (Columbia Record 9108).

8.37: Orchestral selection—Bailey-Marston Orchestra, "In a Persian Market" (Ketelby).

8.42: Quartet—Radiolians, "Ye Banks and Braes" (Traditional).

Contralto solo—Miss Mildred Russell, "John Anderson, My Jo" (Traditional).

8.49: Instrumental trios—Christchurch Broadcasting Trio, (a) "Canzonetta" (Mathias); (b) "Waltz" from "Sleeping Beauty" (Tschalkowsky).

8.58: Soprano and contralto duet—Radiolian Duo, "Oh! Wert Thou in the Cauld Blast."

9.1: Highland warpipes—Pipe-Major Wm. Ross, (a) "Caledonian Society of Winnipeg" (March); (b) "The Glengarry Gathering" (March) (Parlophone Record A2820).

9.3: Weather forecast.

9.5: Overture—Bailey-Marston Dance Orchestra.

9.10: Bass solo—Mr. W. J. Richards, "Scots Wa' Hae."

9.14: Foxtrots—Bailey-Marston Dance Orchestra, (a) "That's My Weakness Now" (Step); (b) "You're a Real Sweetheart" (Friend).

9.22: Soprano solo—Mrs. Claris Shaw, "Caller Herrin'."

9.26: Scottish humour—Will Fyffe, "I Belong to Glasgow" (Fyffe) (Columbia Record 961).

9.30: Dance music—Bailey-Marston Dance Orchestra, (a) "My Ohio Home" (Donaldson); (b) "Last Night I Dreamed You Kissed Me" (Kahn).

9.38: Contralto solo—Miss Mildred Russell, "Ca the Yowes to the Knowes."

9.42: Foxtrots—Bailey-Marston Orchestra, (a) "Breeze" (Hanley); (b) "San" (Michels).

9.50: Tenor solo—Mr. Gregory Russell, "Old Scottish Song."

9.54: Waltz and foxtrot—Bailey-Marston Dance Orchestra, (a) "Jeannine" (Shilkret); (b) "Fanzies" (Nicholls).

10.2: Tenor and bass duet—Radiolian Duo, "Bonnie Dundee."

Quartet—Radiolians, "Auld Lang Syne."

10.8: Waltz and foxtrot—Bailey-Marston Orchestra, (a) "Ramona" (Wayne); (b) "Chilly Pom Pom Pee" (Dassian).

Dance music programme until 11 p.m. by the Bailey-Marston Dance Orchestra.

11.0: God Save the King.

4YA, DUNEDIN (463 METRES)—FRIDAY, JANUARY 25.

3 p.m.: Town Hall Chimes.

3.1: Gramophone concert.

3.30: Afternoon tea music from the Savoy.

3.40: Studio items.

4.0: Music from the Savoy.

4.15: Gramophone items.

4.25: Sports results.

4.30: Close down.

6.0: Town Hall chimes.

6.1: Children's hour, conducted by Auntie Sheila and Big Brother Bill.

7.15: News session.

8.0: Town Hall chimes.

8.1: Selection—Court Symphony Orchestra, "The Gondoliers" (Sullivan) (Columbia Record 979).

8.9: Mezzo-soprano solos—Miss Dorothy Sligo, (a) "Thoughts" (Fischer); (b) "A Heart that's Free" (Robyn).

8.14: Violin solo—Yelly D'aranyi, "Poeme Hongroise" (Hubay) (Columbia Record 03584).

8.18: Bass solo—Mr. Neil Black, "The Last Milestone" (Pontet).

8.22: Novelty—Flotsam and Jetsam, "Optimist and Pessimist" (Hilliam) (Columbia Record 0995).

8.26: Contralto solos—Miss Dorothy Skinner, (a) "Pleading" (Elgar); (b) "Lie There My Love" (McCunn).

8.32: Pianoforte solo—Miss Aileen Young, "Le Dernier Rendezvous" (Rebittkov).

8.36: Mezzo-soprano solo—Miss Dorothy Sligo, "Go Down to Kew" (Peel).

8.40: Pianoforte concerto—Ignaz Friedman, "Concerto in A Minor—1st Movement" (Grieg) (Columbia Record 02702/3).

8.55: Bass solos—Mr. Neil Black, (a) "The Trumpeter" (Dix); (b) "The Blind Ploughman."

9.0: Violin solo—Yell D'aranyi, "Hungarian Dance, No. 8" (Brahms and Joachim) (Columbia Record 03584).

9.3: Weather forecast and announcements.

9.4: Contralto solo—Miss Dorothy Skinner, "Lament of Isis" (Bantock).

9.7: Novelty—Flotsam and Jetsam, "The Business Man's Love Song" (Hilliam) (Columbia Record 0995).

9.11: Relay of dance music from the Savoy.

10.0: God Save the King.

Saturday, January 26

1YA AUCKLAND (333 METRES)—SATURDAY, JANUARY 26.

- 3.0 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Further studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's hour, conducted by Cinderella.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Waltz—The Troubadours, "Cielito Lindo" (Beautiful Heaven) (H.M.V. Record EA349).
 8.4: Vocal Trio—The Snappy Three, "Anything to Make You Happy" (Valentine).
 8.11: Instrumental—Auckland Trio, "Finale Trio in F" (Godard).
 8.18: Comedian—Frank Crumit, "The Song of the Prune" (Crumit, de Costa) (H.M.V. Record EA366).
 8.22: Banjo Duo—Messrs. Higgott and Morrison, (a) "Sunshine" (Irving Berlin) (b) "That's My Weakness Now" (Green).
 8.30: Vocal—Snappy Three, "Jeanie, I Dream of Lilac Time" (Shilkret).
 8.34: 'Cello solo—Miss Molly Wright, "Arlequin" (Popper).
 8.38: Foxtrot—"Kiddie Kapers" (Shilkret) (H.M.V. Record EA401).
 8.42: Vocal and piano—The Snappy Three, (a) "Who" from "Sunny" (Kern), (b) Jazz Piano solo.
 8.49: Light Orchestral—New Light Symphony Orchestra, (a) "Hearts and Flowers" (Tobani); (b) "The Glow-Worm Idyll" (Lincke).
 8.58: Weather forecast and announcements.
 9.2: Instrumental Trio—Auckland Trio, "Irish Pictures" (Ansell).
 9.8: Humour—John Henry and Blossom, "Story of Lady Godiva" (H.M.V. B2485).
 9.12: Vocal Trio—Snappy Three, "After My Laughter Came Tears" (Turk).
 9.16: Banjo Duo—Messrs. Higgott and Morrison, (a) "Just Like a Melody Out of the Sky" (Donaldson); (b) "Anything You Say" (Donaldson).
 9.24: Programme of Dance Music.
 10.0: God Save the King.

2YA WELLINGTON (420 METRES)—SATURDAY, JANUARY 26.

- 3.0 p.m.: Chimes of the G.P.O. Clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sporting results to hand.
 6.0: Children's hour conducted by Uncle Toby and Aunt Gwen.
 7.0: News session, market reports and sporting results.
 8.0: Chimes of the G.P.O. Clock.
 8.1: Overture—The Orchestra, "Carmen" (Bizet).
 8.5: Waltz—The Orchestra, "Mystery" (Barnes).
 8.10: Quartet—Melodie Four, "The Goslings" (Bridge).
 8.14: Novelty piano solo—Mr. James McKenzie.
 8.19: Bass solo—Mr. W. W. Marshall, "Roll on Thou Deep and Dark Blue Ocean" (Petrie).
 8.24: Solo and chorus—Virginia Perry and Chorus, "My Hero" from "The Chocolate Soldier" (Strauss) (Columbia Record 01173).
 8.28: Humour—Mr. W. McKeon, "The Voyage of Disaster" (Williams).
 8.35: Novelty—The Orchestra, (a) "Haunting Humoresque" (Black); (b) "Dragon Fly" (Finch).
 8.43: Quartet—Melodie Four, "Sweet Genevieve" (Arr. Len. Barnes).
 8.47: Hawaiian Instrumental—Clark's South Sea Islanders, "Good-bye Hawaii" (Bories) (Columbia Record 01225).
 8.52: Tenor solo—Mr. Sam Duncan, "At Dawning" (Cadman).
 8.54: The Orchestra, repeat item.
 9.2: Weather forecast and announcements.
 9.4: Hawaiian Instrumental—King's Hawaiian Players, "Hilo March" (Berger) (Columbia Record 01226).
 9.12: Baritone solo—Mr. R. S. Allwright, "Three For Jack" (Squire).
 9.16: Novelty—The Orchestra, "The Old Clock" (Fox).
 9.20: Tenor solo—Mr. Frank Bryant, "A Song Remembered" (Coates).
 9.24: Solo and chorus—Virginia Perry and chorus, "The Merry Widow Villa" (Lehar) (Columbia Record 01173).
 9.28: Novelty piano solo—Mr. James McKenzie.
 9.34: Humour—Mr. Will McKeon, "Motoring Stories" (Original).
 9.40: Musical Comedy Selection—The Orchestra, "Sally" (Kern).
 9.50: Quartet—Melodie Four, "Old Mother Hubbard" (Wheeler).
 9.55: The Orchestra, "Dance Novelties."
 10.5: Dance programme.
 11.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—SATURDAY, JANUARY 26

- 3.0 p.m.: Afternoon session—gramophone recital.
 4.30: Close down.
 6.0: Children's hour, conducted by Chuckle and Aunt Pat.
 7.15: News session.
 7.30: Sports results.
 8.0: Chimes.
 Special engagement of "The Gipsy Troubadours," who will present a unique radio entertainment.
 10.0: God Save the King.

4YA DUNEDIN (463 METRES)—SATURDAY, JANUARY 26.

- 7.15: News session.
 8.0: Town Hall chimes.
 8.1: Special Scottish programme to commemorate the birthday of Robert Burns.

Sunday, January 27

1YA, AUCKLAND (333 METRES)—SUNDAY, JANUARY 27.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Further selected items.
 4.30: Close down.
 6.0: Children's song service conducted by Uncle Leo.
 6.55: Relay of evening service from Beresford Street Congregational Church. Preacher, Rev. Lionel B. Fletcher; choirmaster, Mr. W. Gemmell.
 8.30: Orchestral—Columbia Symphony Orchestra, "Wedding March" from "Midsummer Night's Dream" (Mendelssohn) (Columbia Record 02663).
 8.34: Vocal duet—Miss Cora Melvin and Mr. Norman Day, "One Little Hour" (Sharpe).
 8.38: Baritone solo—Mr. Norman Day, "Little Mary Fawcett" (Wibby).
 8.42: Pianoforte concerto—Ignaz Friedman, "Concerto in A Minor" (second and third movements) (Grieg) (Columbia Records 02704-5).
 8.57: Soprano solos—Miss Cora Melvin, (a) "Solveig's Song" (Grieg), (b) "Song of the Nightingale" (Phillips).
 9.5: 'Cello solo—W. H. Squire, "The Swan" (Saint-Saens) (Columbia Record 04179).
 9.9: Baritone solo—Mr. Norman Day, "The Farmer's Pride" (Russell).
 9.14: Orchestral—Berlin State Opera Orchestra, "The Magic Flute" (Mozart) (H.M.V. Record E464).
 9.22: Vocal duet—Miss Cora Melvin and Mr. Norman Day, "Farewell to Summer" (Johnson).
 9.26: God Save the King.

2YA, WELLINGTON (420 METRES)—SUNDAY, JANUARY 27.

- 3 p.m.: Chimes of the G.P.O. clock, Wellington.
 3.1: Selected gramophone items.
 4.30: Close down.
 6.0: Children's song service conducted by Uncle George, assisted by Hataitai Methodist Sunday School Choir.
 7.0: Relay of evening service of St. Thomas's Anglican Church, Newtown. Preacher, Rev. C. V. Rooke. Organist and choirmaster, Mr. W. A. Gatheridge.
 8.15 (approx.): Overture—Berlin State Opera Orchestra, "The Beautiful Galathea" (Suppe) (H.M.V. Record C1527).
 Soprano solos—Mrs. E. Meban, (a) "Melisande in the Wood" (Goetz); (b) "Obstination" (Fontenailles).
 Pianoforte solo Alfred Cortot, "Rigoletto Paraphrase" (Verdi-Liszt).
 Bass solos—Mr. J. M. Caldwell, (a) "Hear My Prayer" (Dvorak); (b) "Sing Ye a Joyful Song" (Dvorak).
 Organ solo—Dr. Harold Darks, "Fantasia" (Mozart) (H.M.V. Record C1448).
 Tenor solo—Mr. J. Fordie, "If With All Your Hearts" (Mendelssohn).
 Overture—Grand Symphony Orchestra, "Fra Diavolo" (Auber) (Parlophone Record A4022).
 Soprano solos—Mrs. E. Meban, (a) "Serenata" (Tossell); (b) "From the Land of the Sky Blue Water" (Cadman).
 String quartet—Virtuoso String Quartet, (a) "Tambourin" (Gossee, arr. Sharpe); (b) "Molly on the Shore" (Grainger) (H.M.V. Record B2589).
 Bass solo—Mr. J. M. Caldwell, "The Lord is My Light" (Allitsen).
 Instrumental octet—J. H. Squire Celeste Octet, "Angel's Serenade" (Braga) (Columbia Record 9118).
 Contralto solos—Essie Ackland, (a) "Down Here" (Brahe); (b) "O That We Two Were Maying" (Nevin) (H.M.V. Record B2740).
 Violin solo—Tossy Spiwakowsky, "Turkish March" (Beethoven) (Parlophone Record A2561).
 Tenor solo—Mr. J. Fordie, "Good-Bye" (Tosti).
 Instrumental octet—J. H. Squire Celeste Octet, "Serenade" (Titl) (Columbia Record 9116).
 Chorus—Victor Mixed Chorus, "Anvil Chorus" from "Il Trovatore" (Verdi) (H.M.V. Record EA89).
 Band selections—Band of H.M. Coldstream Guards, (a) "Air de Ballet"; (b) "Callirhoe"; (c) "Pas de Cymbals" (Chaminade) (H.M.V. Record C1501).

3YA, CHRISTCHURCH (306 METRES)—SUNDAY, JANUARY 27.

- 3 p.m.: Afternoon session—Gramophone recital.
 4.30: Close down.
 5.30: Children's song service conducted by Chuckle, assisted by children from the Presbyterian Sunday School.
 6.15: Hymn chimes.
 6.30: Gramophone recital.
 7.0: Relay of evening service from St. Paul's Presbyterian Church (Preacher, Rev. W. Bower Black, LL.B.; organist, Mr. Norman Williams).
 8.15 (approx.): Studio concert.
 Orchestral—Philadelphia Symphony Orchestra, "Symphony in D Minor" (first movement) (Franck) (H.M.V. Records 1404-5).

- 8.30: Contralto solo—Miss Nellie Lowe, "Thanksgiving" (Cowan).
 8.34: Tenor recitative and aria—Mr. T. G. Rogers, (a) "Deeper and Deeper Still"; (b) "Wait Her, Angels" (Handel).
 8.39: Violin solo—Fritz Kreisler, "Caprice Viennois" (Kreisler) (H.M.V. Record DB1091).
 8.43: Contralto and tenor duet—The Dulcet Duo, "Glory to Thee, My God, This Night" (Gounod).
 8.48: Duet in Italian—Florence Austral and Browning Mummery, "Home to Our Mountains" (Verdi) (H.M.V. Record D1302).
 9.2: Contralto solo—Miss Nellie Lowe, "In the Chimney Corner" (Cowan).
 9.6: Violin solo—Fritz Kreisler, "Humoresque," Op. 101, No. 7 (Dvorak) (H.M.V. Record DB1091).
 9.10: Tenor solo—Mr. T. G. Rogers, "Father of Light" (Adams).
 9.14: Tenor solo with violin accompaniment—John McCormick, "Softly Thru the Night is Calling" (Schubert) (H.M.V. Record DA458).
 Gramophone recital until 9.30 p.m.
 9.30: God Save the King.

4YA, DUNEDIN (463 METRES)—SUNDAY, JANUARY 27.

- 5.30 p.m.: Children's song service conducted by Big Brother Bill.
 8.30: Relay of evening service from St. Paul's Cathedral (Preacher, Rev. Canon Nevill; organist, Mr. E. Heywood, F.R.C.O.).
 8.0: Relay from St. Kilda (weather permitting) of concert by the St. Kilda Band.
 9.15: God Save the King.

Wireless to Aid Meteorology—A Curious "Fault."

IMPORTANT developments in meteorology are foreshadowed in the message of Professor William H. Hobbs, leader of the University of Michigan Expedition to Greenland, broadcast to Commander Richard E. Byrd and his associates from the Westinghouse Radio Station, KDKA, Pittsburg. In his message to Commander Byrd, Professor Hobbs states that a German scientist, Herr Wegener, has made arrangements to erect two meteorological and aerological stations during 1929 and 1930, which will be in operation for a whole year, one in the remote interior of Greenland and the other close to the coast. The American Professor expressed the hope that Commander Byrd would be able to maintain a station on the inland ice of King Edward Land, in addition to his main base station on the edge of the ice barrier.

It was thought that this will afford splendid opportunities for Mr. Frank Davies, one of the expedition's scientists, to do pioneer work on radiation measurements for different types of ice, as well as for water and land. Professor Hobbs concluded his message with the suggestion that very important returns can be obtained if meteorological work can be carried out both in Greenland and the Antarctic.

A NEW company is being formed in England, under the name "Wireless Pictures, Ltd." The firm will have a capital of £425,000, and business will consist of constructing and selling radio picture receivers.

A NEW type of light sensitive cell has been evolved by an American inventor. This, it is claimed, may dispel many of the difficulties facing the faithful transmission of moving images—television.

A TROUBLE which often puzzles the non-technical listener very much is when the set, after working perfectly, suddenly "goes off," speech becoming very indistinct and "far away," whilst music practically vanishes. After a short time, perhaps no more than a few minutes, the set will go back to normal, for no apparent reason. The trouble then may not occur again that evening or perhaps for several evenings, when, without any warning, the same thing happens.

If this happens to your set, try switching in to another station on a different wavelength. If the trouble is the one we are discussing, you will find that the alternative station comes in perfectly, and probably by the time you switch back to the original station that also will be coming in in the normal way.

If you have, in the meantime, in searching for the trouble in the set itself, made a few alterations or adjustments, it is as well to put things back as they were and see whether the set then behaves as I have indicated above.

Interference.

So, it is practically certain that the trouble is not due to the set at all, but to interference by a set somewhere in the immediate neighbourhood.

The type of oscillator who causes howls and wails, comparatively easy to discover, but there is a kind of oscillation which is not evident by any means of that kind, and, when the oscillator switch is on, his set may be oscillating steadily and causing interference all round without the fact being known even to himself.

If, therefore, you find your set afflicted with these sudden and mysterious fits of "going off," you may be pretty certain that the cause of the trouble is to be looked for a little further afield.

Great Singers of the Past

Memories Survive through Radio and Gramophone.

THE broadcasting by means of their gramophone records of a Caruso-Patti concert opens up large possibilities, says a recent issue of the "Radio Times." The idea is not quite new, for anniversary concerts of Caruso have been broadcast from the Continent.

Tolstoy's centenary, which occurs shortly, might well be marked by the broadcasting of a spoken record (in English) made by him in 1907, when he was seventy-nine.

Ellen Terry is, alas, gone, but a record of her famous rendering of Portia's speech, "The Quality of Mercy," made in 1911, is still available. So are two French recitations of Sarah Bernhardt.

In addition to Caruso and Patti, vocalists still to be heard, though gone from us, include Sir Charles Santley and Edward Lloyd. Foreign singers such as Pol Plancon and Ewan Williams have left many records, as did Tamagno, possessor of the mightiest tenor voice of the last century, for whom the title role of Verdi's "Otello" was specially written.

Possibly less known, but makers of exceedingly fine records, were Gervase Elwes, Charles Mott, and William Samuelli, whose dainty record of the "Queen Mab" song from "Romeo and Juliet" is an excellent piece of "whispering baritone" work.

Terry and Bernhardt are not alone as representatives of the Victorian stage, for we have Sir Herbert Beerbohm Tree in Shakespeare, including a fine droll rendering of Falstaff's Speech of Honour, and as Svengali in "Trilby"; Lewis Waller in two famous examples of his elocutionary skill; and poor Arthur Boucher in "Macbeth." Another famous elocutionist who has left records of his voice is Canon Fleming, who, at the age of seventy-six, recorded the "Charge of the Light Brigade."

MEMORIES of the lighter musical stage can be recalled by Dan Leno, who recorded most of his best known numbers four years before his death in 1904: Eugene Stratton in, for example, "Lily of Laguna," one of the late Leslie Stuart's songs; Maurice Farkoa either in English ("I Like You in Velvet," quite a fine record on a modern instrument) or French; Albert Chevalier in most of his Cockney ditties; Fred Emney, Burt Shepard,

George Formby, Tom Foy, and Alfred Lester, both in earlier work and his latest successes prior to his death.

Those whose memories are of instrumental music can have them revived by the almost legendary Joachim in a typical Brahms dance; by the equally famous Sarasate in some of his own compositions; by Mary Law and Maud Powell, Sousa's great soloist; or by the flautist, Eli Hudson. Both Edvard Grieg, as pianist, and Saint-Saens, either as solo pianist or accompanist in violin pieces, can still be heard interpreting their own works. Of conductors, the "mesmeric" Nikisch, and Leoncavallo and Sir Frederick Bridge rendering their own compositions are likewise available.

The list of dead orators recorded includes Lord Roberts in records made in 1913, Lord Oxford and Asquith, Lord Long, and Sir William Treloar; three Presidents of the United States, Theodore Roosevelt, Woodrow Wilson, and Warren Harding; and two famous explorers in Commander (later Admiral) Peary and Sir Ernest Shackleton.

Apart from Edison, who is said to have recited "Mary Had a Little Lamb" as his first record, the earliest famous man to have his voice recorded was the poet Browning, who died in 1889. Gladstone's voice was also recorded in the old cylinder record days, being chiefly listened to, if a contemporary historian may be believed, by foreigners.

The earliest disc records of a famous voice are the Dan Leno ones already mentioned, but the earliest Caruso discs were made in 1902, one of them, a ten-inch of "On With the Motley," with piano accompaniment only, securing him, by cable, his first New York engagement.

It was chiefly the early Caruso records which, in 1906, overcame Patti's sworn resolve to have nothing to do with "talking machines," though by that time Sarasate, Grieg, Santley, Lloyd, Bernhardt and Tamagno had all visited the recording room. Exercising her feminine privilege, she asked to have her voice reproduced, but insisted on the necessary apparatus being brought to her Welsh home, Craig-y-Nos Castle, for the purpose. She was entranced by the result, hearing her own voice as others heard it for the first time.

Chanticleer and the Races

LATELY 2FC delighted followers of horse racing by transmitting the sport direct from Melbourne, Newcastle, and Canterbury, all on the same afternoon, with never a hitch or a pause.

The sensitive microphone picked up and transmitted with startling clarity the enthusiastic crowing of an old rooster in close proximity to the Canterbury course, and this novel touch greatly amused listeners, who are quick to respond to anything in the nature of "atmosphere." They, too, had cause to "crow."

The successful manner in which the race descriptions were relayed from

three different courses so many hundreds of miles apart was a triumph of organisation, and one on which the New South Wales Broadcasting Company is to be warmly congratulated.

IT is reported that the spaced aerial system of reception with which it was hoped to overcome fading effects, has proved disappointing, and this is the reason why we have not recently heard regular relays of American stations.

IT is understood that negotiations now in progress between the Radio Corporation of America and the Victor Talking Machine Company will probably result in a merger within the next few months.

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Why?

The Unmusical Tremolo.

MAY I ask for insertion in the "Radio Record" of the attached cutting from the "Observer" (London) of October 14, 1928? It gives expression to sentiments I have strongly held for a long time past, and although I know I shall be considered hopelessly out of date and antiquated as to my musical taste, I still feel that I am in good company. I have very pleasant recollections of singers to whom I have listened in times past, both here in New Zealand and also in London, who gave utterance to song in a natural manner, without that abominable vibrato to which we are nowadays compelled to listen. It gets on my nerves and reminds me of an old friend, himself an able musician, who, when once speaking about it, used an expression forefitted with an adjective that would not look well in print! This style of singing is, I presume, an outcome of what is euphemistically called "voice production."—T. PROCTOR (Island Bay).

Sir,—I was very interested to read your "Special Correspondent's" strictures on "wobbling" in the broadcasting programmes. I have not been able to discover a single individual who approves of it, and countless protests have appeared in the Press against it. It is as bad as ever, if not worse, and, with your correspondent, I ask why? Why is it not plainly given out to all applicants: "We do not engage singers

Our Mail Bag

Will correspondents please practice brevity, as heavy demands are now made on space. All letters must be signed and address given as proof of genuineness; noms de plume for publication are permitted. Address correspondence Editor, "Radio Record," P.O. Box 1032, Wellington.

who use the tremolo"? The persistence in engaging offenders is provocative of much strong language from those who know what good singing is, and ruining the taste of the rising generation.—Yours faithfully,

M. A. WHEATLEIGH.

London, S.W.4, October 14, 1928.

The Control was Master Oscillator Tube.

ON Tuesday night (January 1) was 2YA on valve or crystal control? I would like to know, because Tuesday night's programme was almost perfect; in fact, the least fading since I got my set last February.

The Use of Growlers.

I SEE a lot of growling about the different New Zealand stations. I often wonder why some of the growlers do not try some other station. There are four YA stations in New Zealand, and if one does not suit I find one of the other three stations does. But there is one good thing about the growlers, they have their own use, and I do not see that they do much harm. They will certainly help to keep the Broadcasting Company up to the mark if nothing else, but I expect that they would still growl if they had their radio service and their "Radio Records" for nothing. For myself, I have yet to get the Australian station that can beat our four YA stations. So carry on the good work, and at the same time nothing but the best is good enough for New Zealand. We have the best country in the world, and let us have also the best radio service by constant improvements.—W. A. SUNDERLAND (Port Chalmers).

4YA Wanters on Sunday.

ON opening "Radio Record" each week I always look for 4YA's Sunday programme, and never see an afternoon programme or session there. I consider that in fairness to Southland listeners, you should transmit from 4YA on Sunday afternoons. We can hear 3YA some Sundays, 2YA others, and occasionally 1YA, but cannot rely on any of them for entertainment. Here 4YA is the only reliable daylight station and, of course, it is not on the air on the only day most of the listeners have an opportunity to listen to radio.

4YA's Wednesday evening's request gramophone session is a treat here, and I would like to have more of it. After dark 4YA falls off and isn't worth tuning in generally, so why not give us a little extra daylight transmission—just 90 minutes—every Sunday.

Night reception from 2YA has been very good for all the period. It has easily been the best station all the time. 3YA seems to have fallen off from last summer's reception. In regard to the programmes, they have been excellent, all classes of listeners being well catered for.

In "Radio Record" of December 28, I see where Mr. F. C. Collins suggests a reduction in the power of 2YA. I say, "Not on your life!" We are not

troubled with distortion here, and the volume helps to overcome static and like interferences.—A. PARCELL (Invercargill).

Wobble of 4YA Carrier.

ONE of my New Year resolutions is to nag the R.B.C. about poor old 4YA. During Christmas and New Year 4YA was on the air fairly often, and not once while I was listening did the carrier-wave stop wobbling, just up and down all the time. It reminds one of the average S.W. station. The volume is there, but good modulation is impossible with a carrier like that. The fault must be in my receiver (yes, blame the receiver as usual), but why don't 4ZL, 4ZM, 1, 2 and 3YA wobble like that. You can't expect to get more radio licenses down here with a station like that. Put a decent 500-watt output transmitter at 4YA, and the Scotchmen here will say, they are getting something for their money, and the licenses will come in, in great style. Make New Plymouth or Hastings a present of old 4YA. We were promised a new station at Stuart Street Dunedin, to be completed and officially opened during 1928. The company is taking a long time. Anyway, we are living in hopes down here, we may get a new station before 1930.—J. LEADBETTER (Gore).

Auckland Notes

(By "Listener.")

NO listener can accuse 1YA of any lack of desire to experiment. Nearly all of the novelty features that have brightened New Zealand radio programmes have originated in the northern city, and on Wednesday evening last, we were privileged to enjoy another of them. For an interesting and instructive hour four Auckland University debaters dwelt upon the topic of modern education, and it must be admitted that those who followed the arguments of the speakers were more likely to be convinced by the pair who undertook to prove that modern education was not suited to the requirements of modern life. Each of the four graduates who spoke had a good command of language, a fluency in argument, and a vein of humour that made the discussion thoroughly attractive, and the hour which was given to it seem like a quarter of that time. There is a big future for the radio debate in New Zealand, both as a means of entertainment and as a channel of instruction. The first studio experiment from 1YA amply demonstrated this, and, with localised topics treated in light vein, it is safe to say that regular discussions will achieve a great measure of popularity.

STEADILY and surely the so-called "electric set" is forcing its way into popularity locally. It has so much to commend it to the man who wishes to enjoy broadcasting with a minimum of worry and fuss, and with an assurance of steady current supply, that

the growing demand for "electrics" is not to be marvelled at. Local dealers are realising the possibilities of the newest models, and they will be well-prepared for the rush which is bound to set in as the radio year draws to a close two months hence. During the few ensuing weeks of the closing year, it would be good policy for all those who have the development of broadcast listening at heart to inaugurate an "electric drive"—some system of publicity and development which will bring under notice of the thousands who are yet rather afraid to invest in receiving sets how simple, how inexpensive, and how foolproof the latest receivers are.

AN Aucklander who indulged in a holiday ramble along the lonely west coast near Raglan relates an interesting experience. Darkness had just fallen, and the holiday-maker went for a quiet stroll along a forest-fringed beach to enjoy the peaceful solitude of evening. A dim light shone from a solitary settler's shack on the adjacent hillside; a mopeke gave its distinctive call of the night; then, above the murmur of the surf came the clear call of civilisation, "1YA, Auckland!" The seeker after solitude regarded the mechanically, or rather electrically, reproduced voice as a sacrilege. It was a gross intrusion upon his peace of mind. He wandered up to the house whence came the sound of the loudspeaker, and then changed his opinion. Here was a family to whom radio service meant the annihilation of isolation. The set was their chief connecting link with the outside world. No mail service, no supply of newspapers, according to the owner, could give him all that broadcasting supplied. The holiday-maker returned from that house in a different mood. "I did not realise till then," he said, "one fraction of what radio means to the lonely settler."

THERE is general satisfaction locally that band music is once more to come on the air from 1YA. Nothing has been so much missed from our programmes as the items with which our famous municipal instrumentalists delighted. Their reappearance is not yet scheduled, but in their place will be welcomed the very fine Salvation Army Band.

IT is whispered that, as a result of the recent visit of Mr. J. Ball, of the headquarters staff of the R.B.C., further attractive features and still another new body of performers will make their appearance before the 1YA microphone. The company seems to be sparing no effort to make the local programmes all that they possibly can be within the limitations imposed by a small community.

ONE of the outstanding features in the repeat performance of "Campbell of Kilmohr," given at this station on January 4 by the Auckland Comedy Players, was the appearance of Mrs. Culford Bell as "Mary Stewart." Her characterisation of the loyal and high-spirited old Scottish woman was striking and remarkable in every respect, and the character was made to live again. It is to be hoped that Mr. Montague will induce this talented lady to make some further appearances before the microphone. The Comedy Players are booked shortly to present Harold Chapin's "A Scotch Philosopher," and I understand there is every possibility of Mrs. Bell appearing in this diverting comedy.

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Broadcasting of Sporting Fixtures

Logical Arguments Advanced by Australian Magazine

IN view of the repression of broadcasting of certain of the sporting fixtures in this country, the following article, written for "Wireless Weekly" (Australia), should have great significance. Evidently a position has arisen in Australia regarding the broadcasting of cricket somewhat akin to the position here regarding the racing, though the matter is yet in the embryo stage.

In opposing the suggestion this magazine has, in our opinion, struck at the principle involved, that is: that these authorities have not the moral right to suppress a public demand. The march of progress demands wireless, wireless must satisfy the public, the public demand sporting. Where, then, is the justification for the suppression of this valuable news?

SOME comment has been caused by the discussion of a suggestion recently made that a cricket association should restrict or prohibit the broadcasting of sporting fixtures. Readers' opinions expressed in the daily press naturally show that the proposal is not popular. The opinions obviously would, in the main, be those of interested broadcast listeners. The subject is worth examining. The interest taken in the discussion is at once an indication of the popularity of sport-

ing items in broadcasting programmes, and evidence of the manner in which the new service is invading the domain of older services. In short, it shows the advance of the "novel stunt" of broadcasting, as it was termed but a very few years ago.

"Broadcasting is a community service, if, indeed, it is not a public utility."

"All sections of the community, young or old, look to it for some information, instruction, or entertainment. Some there are who do not care a rap for sport; some want only religious services; others want jazz, and plenty of it; while sections not to be overlooked rely on broadcasting for information, for education and for matters of general interest.

"Thus it is that the theatre, the church, the school, the markets, bureaux, and the sporting fields find a new avenue for interesting their particular adherents as well as the general public.

And none of them can afford to say, 'We will not let this be broadcast;' they cannot adopt a dog-in-the-manger attitude. Similarly the newspapers, the musical entrepreneurs and the sporting promoters will not be able to stop the broadcasting of matter which the listeners want. The march of progress cannot be stopped.

"Not that broadcasting is likely to render those institutions of less utility or attractiveness; it is not likely to put the newspapers out of business, or reduce the attendances in church or at sporting meetings. On the contrary, it is calculated to be of value in giving publicity in quarters where it has not been felt previously. It will be complementary to other methods of publicity—not competitive. Already in Melbourne 3LO has been the means of interesting many people in sport and other matters, who otherwise would not have been attracted to the events. And the large volume of correspondence from all parts of the Commonwealth testifies to the interest taken in sporting descriptions and results by listeners.

[New Zealand listeners, too, are indebted to the excellent broadcasts of the Metropolitan meetings. They have become quite a feature.]

"... Generally, the Australian experience is that sporting bodies are sufficiently public-spirited to listen to public demands, and are always willing to be influenced by 'sweet reasonableness.' That being so, there is no fear of retrograde steps being taken."

IT is to be trusted that Australian "sports" will not try to emulate their New Zealand confederates, for the broadcasts of these Australian fixtures have already become a feature among New Zealanders both in the relays and in listening-in direct.

Wireless in the Sahara Desert

A Story of French Enterprise and Endeavour

THE Sahara, known to the average person as a vast desert in the north of Africa, and the home of the Foreign Legion, has now come before us with a new interest. It has claimed its right in the great wireless fraternity. Inhabitants of that vast sea of sand before the advent of wireless have had no means of communication with the outside world except by the painfully slow camel. Now it has changed and wireless is doing its best to alleviate the burden of the desert dweller.

Early Radio.

THE establishment of the first radio stations in this wilderness date back to the days of the war. Faced with a danger of a rebellion which threatened to disrupt Southern Algiers, the French Ministry for War ordered in 1915 the erection of two radio stations in the Sahara. Working under very adverse conditions, the engineers of the French Army succeeded in completing the first of these stations in 1916. In the south of Algiers several stations were erected.

At the end of hostilities all the stations in Algerian Sahara were converted into radio telegraphic stations. Staffed by capable operators, these had performed a very useful service during the war period. From then on little real progress was registered. During these years the only move was to erect a new station and to reorganise two of the existing ones. Other than that, the scheme to link that great waste with a network of stations stood still. This was due to the difficulty of getting anyone to remain at the stations. The existing staff was from the sappers of the Foreign Legion. These operators after a training extending over several months were sent out to staff these outposts of France. It has been found that this term of instruction was not

long enough to turn out experienced operators for such important posts.

To meet this difficulty the military considered that the sending out of more experienced operators and the formulating of arrangements for their periodic relief would do much to improve the position. These measures were put into effect and showed good results.

Travellers pay great tribute to the service in spite of all its shortcomings. In addition to a traffic, civil and military, the stations transmit a considerable number of private messages addressed to the families of the colonists or to commercial houses. In this manner the radio network is doing great work to assist the colonisation of the great Sahara.

Portable Transmitters.

IN accordance with the nature of the country and the nature of the work the legion have to perform, the question of equipping the motor transport with wireless equipment arose. A conference held some 12 months ago decided that in the interests of the colony the motor convoys should be provided with portable transmitters to operate on shortwave. One of the detachments already possessed such a transmitter, and it was proving that equipment of this nature was indeed beneficial.

Acting on the advice of the Commission the Governor of the Colony then set about equipping the various mobile detachments with wireless.

The business of training the young sappers to become efficient radio operators has been seriously considered, and a large post in Algiers has been turned into a wireless school. In addition, four new posts are being equipped with radio—these correspond to the four companies of the legion, and are for the use of the police.

Everything now points to the establishment of an effective service in these desert regions, and the opinion of the French is that these new developments are to make for greater solidarity, both within the colony and between it and Mother France.

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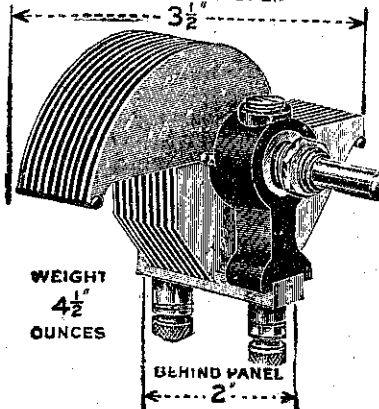
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A Good Three-Valve Set

The "Pentode" Three

By "Pentode"



GLANCING through the pages of an English or American radio magazine, one may come across a circuit that is considered to be just the thing for local conditions, and the cost of components just suit one's pocket, only to find, when on the shopping expedition, that quite a number of the components are unobtainable in New Zealand. Very often the specifications of these standard parts are not given, and the builder is forced to turn his attention to the assembly of a machine more or less out of date.

As a result of numerous inquiries, this receiver has been designed and built to suit the man who wants utmost efficiency from every stage, and the components to be readily obtainable in this country.

There are many who do not care to wind their own coils. In England, standard coils and bases are obtainable already wound, and circuits are given for the use of these. Practically the only standard coils in New Zealand are the well-known Browning-Drake kit and the Neutrodyne. The "Pentode Three" has been designed especially to utilise the Browning-Drake aerial coil and regenerativeformer. Each of their components is readily obtainable here. If battery voltage is used as recommended, the tonal qualities are all that can be desired, and although reaction is employed, the receiver is non-radiating and cannot annoy neighbours through howling valves.

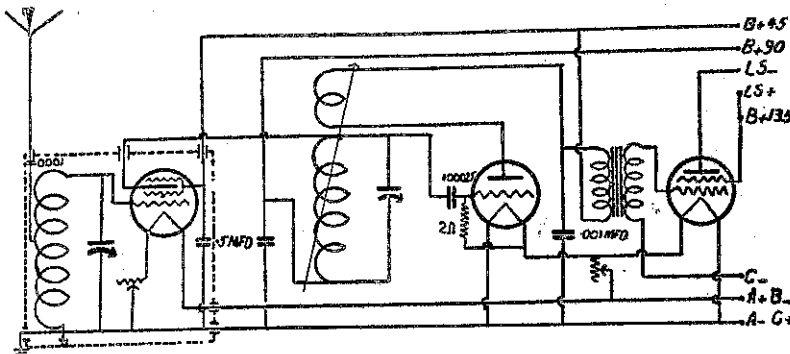
The B.D. Kit.

ONE or two commercial B.D. kits include two tuning condensers, in which case they may be omitted from the list. Whatever make of components are utilised, the general layout will have to be checked over to make sure that all parts will fit in without undue overcrowding.

To suit the high impedance of the screened grid valve itself, there has to be a high impedance in the anode. The circuit is known as the tuned anode method of coupling, and the small primary winding, inside the regenerativeformer is not used. To prevent small losses this can be removed.

The writer has in mind one or two commercial B.D. kits in which the detector screws directly to the front

The sheet of metal will have to have overall measurements of 18½ in. by 19½ in. Mark and cut to a shape similar to the used for the screening box for the "Rotorua Portable" described in the special issue, but make each side 6½ inch x 6½ inch. Half an inch is allowed for overlap, and the holes can be drilled after the box has been made. Four small nuts and bolts will be required to hold the box to-



Theoretical Diagram of "Pentode" Three."

panel with the variable tickler or reaction coil above. If the reader has one of this type, the layout of the detector and audio section will have to be altered to suit.

The Screening Box.

THE only part requiring much attention is the screening box. This is made of No. 2A gauge aluminium, and when finished measures 6½ inches square with removable lid. Some builders may prefer to use sheet copper, in which case a thinner gauge can be used, and all the seams soldered.

gether, and four wood screws into the baseboard hold the side and base firmly together.

A lid will have to be made 6½ in. square, and the constructor can easily do this without any help. In order that the screening box will not project over the top of ebonite panel, the baseboard will have to be ½ in. thick. Cut this from a piece of dry wood to measure 18 in. x 7 in. x ½ in., and screw the panel to the front edge. Brackets will hardly be required as the box will hold the whole rigid. On the extreme left-hand side of the panel and one and a half inches from the end, fix one of the 20 ohm. rheostats. Three and a quarter inches from the centre hole of the rheostat drill a hole large enough to take the spindle of one of the tuning condensers. Unscrew these two components from the panel, and lay the screening box along the back, flush with the panel. The side of the box on which the nuts and bolts are fastened will have to be at the rear, so that a perfectly flat edge is presented to the panel. Now, with a sharp point mark the box through the holes in the front panel, and drill to the same size. Before fixing the box

finally into place drill four holes one-eighth of an inch diameter along the back and right-hand side and half an inch from the bottom. Reference to the diagram will show where these are placed. To earth the metal screen a nut and bolt with a soldering lug can be fixed in the centre of the back of the box, half an inch from the bottom.

Before fixing the panel, drill holes to take the remaining components to be screwed to the ebonite. The two megohm grid leak is seen to be close to the panel, and due to the grid coil being at a high positive potential the leak cannot be fitted directly across the condenser. Unless a special holder is provided, two small metal clips can be screwed to the panel to hold the grid leak.

Now fit the box to the front by clamping between the condenser and the holding nut. The rheostat also passes through both the ebonite and the metal. Four small wood screws are screwed through the double thickness of metal at the bottom, into the baseboard. Behind the first rheostat lies the grid coil for the high frequency valve. Unless the small .0001 m.f.d. condenser is provided with insulated feet, a slip will have to be made so that neither of the connections come in contact with the screen. A valve socket and 5 m.f.d. condenser complete the components inside the box.

At either end of the rear of the baseboard are fixed terminal strips, each with two terminals. A longer strip fitted with six terminals is fastened in the middle (see diagram). The remainder of the components will have to be arranged according to their sizes and shapes. As has been stated before, different types of coils have various methods of mounting, and the builder will have to arrange his parts to suit the parts themselves.

The Wiring.

WHATEVER the arrangement, the point-to-point wiring will be the same, and by following the wiring diagram no difficulty should be experienced. The points marked X in the high frequency section are leads taken direct to the metal screen. Small soldering lugs can be fixed under the wood screws or nuts and bolts that hold the box together, and the wires soldered on direct. If the end plates of the condenser are of metal, then this component is already earthed. If the rheostat of the high frequency

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HERE is an easily-built loudspeaker that gives fine quality reproduction, with prominence to bass notes without losing the higher tones, and eliminating any tendency to "scratchiness" in the latter. This speaker has been designed by the writer to give good volume and quality from any decent amplifier that will give not less than full volume on a good power valve in the last stage.

Only the wood case has to be constructed, and in this work there is ample scope for the amateur cabinet-maker, the finished appearance depending chiefly upon his skill and patience. The novel character of the speaker is in doing away with any kind of paper diaphragm, and making the case as a whole do the duty of a cone.

The Cabinet.

THE accompanying diagrams give all necessary dimensions, the whole being constructed from a piece of seasoned rimu five feet long by 11½ inches

wide, obtainable from any timber yard. The dressed thickness should be exactly 3-8in.

Solid construction is to be aimed at if good tone is required, and all joints should be fastened with ¼in. No. 6 brass screws, and also glued in order to make an airtight joint. Constructors who do not possess a glue-pot can use seccotine.

It will be seen that the body of the speaker is merely a box of correct dimensions, in the front of which is placed an ornamental grille. The sides

are spaced about 3-16in. from the front edges of the box because the front is to be removeable, and the space is left in order to eliminate any chance of rattle from a loose joint. The front is secured to the top and bottom by projecting strips ¼in. wide, behind it.

The bars of the grille are cut from the 3-8in. board, and are planed up to a width of ¼in. They should be cut just short of the inside height of the box, and are secured to the inside of the front with a brad at each end. Put on the middle bar first in the exact centre, then carefully measure the spacing of the next two, nailing them in position.

less than inside of box to allow room to fasten the bars (10-7-8).

The back is the same width as the top and bottom pieces, 8½ inches, and the height must be made an exact fit after the top, bottom and sides are put together. Glue is applied to the inside edges of case, the back is then pushed in and secured by screws.

A neat effect is obtained by rounding off the edge of the front aperture. It should be noted that the front of the speaker projects beyond the box about ¼in. each side.

Finishing the Speaker.

THE outside of the speaker is finished according to taste, with Leonart walnut stain, shellac, or other medium, whilst the interior should be painted black. When all is dry, the Omniphone unit is hung inside the back of the box so that the end of driving spindle rests against the centre. The shaped "foot" is secured to the wood by means of a small piece of coarse cloth, or webbing, folded to two or three thicknesses and secured at each end by a ¼in. screw and washer, leaving the unit free to find its level, resting against the back.

The best effect is obtained when this speaker is hung on the wall, the projecting pieces at the back leaving a clear inch space in order not to deaden the vibrations. Its appearance is similar to that of the familiar boxed-in cones, and its performance is equal to some and better than many. If quality is not produced by this speaker, it is a sure sign that the amplifier needs improvement, as the utmost clarity of speech is obtainable if the amplifier can supply it.

If constructors have any difficulty in procuring an "Omniphone" unit, locally, they should write direct to the Rodger Importing Co., Ltd., 159 Manchester Street, Christchurch, the price being 30/., plus postage.

Useful Suggestions

An Improvised Aerial.

A TEMPORARY aerial and earth can be obtained if a receiver is required to be operated out of doors, if a nail is driven into the trunk of a tall tree, ten or twelve feet from the ground, and a similar one as close to the earth as possible. With a piece of flexible wire, join the higher nail to the aerial terminal of the set, the lower one, connect to the earth, or ground terminal of the receiver.

Balanced Valves in Push-pull.

READERS who use push-pull circuits should make a point of checking the emission of their valves from time to time, to see that one or the other has not seriously fallen off, thus upsetting the balance. A paper label should be stuck on each of the push-pull valves, and the emission at zero grid volts for a given plate voltage marked when the valve is new. No elaborate apparatus is necessary to make this check. It is advisable not to keep the valve alight for more than a minute or so at zero grid volts. Some of the modern super-valve valves have a nasty habit of losing a considerable portion of their emission without warning, and a check of the kind mentioned should certainly be made from time to time.

A Novel Loud-Speaker

For the "Omniphone" Unit.

By "Meghom"

RADIO DIRECTORY

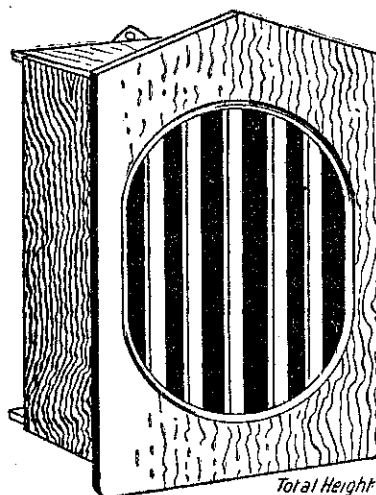
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CITIES

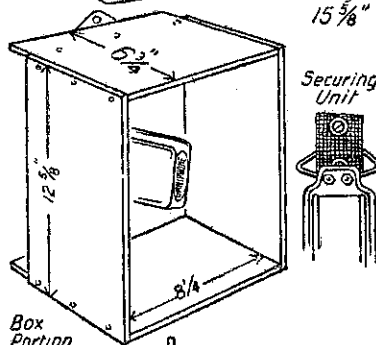
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Chancery Street, Auckland. |
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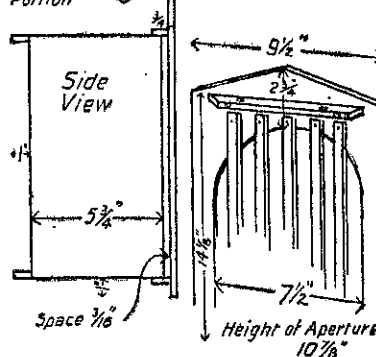
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| ANCHORADIO, BREMER-TULLY, RADIOLA, BROWN-ING-DRAKE, AND ATWATER-KENT RADIO | Radio House,
Hamilton. G. S. Anchor, Manager. |
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Total Height
15 3/8"



Box Portion



The spacing is 7-8in. The front aperture is a half-circle at top and bottom, joined by a straight line each side. The total height of aperture is sufficiently

Hand Capacity Troubles

Hints that will Help

OPERATORS are often troubled with hand capacity troubles, and in that respect the following from "Popular Wireless" should be of more than passing interest:—

Hand-capacity trouble, as its name implies, is usually due to the fact that the operators' hands, being really objects at earth potential, produce a slight increase in the capacity of earth when brought near to high potential parts of the receiver such as the "grid" side of the tuning condensers. When the operator's hands are removed this slight additional capacity vanishes, so that tuning is naturally altered. Also bringing the hands near to a coil changes its inductance, very slightly, but sufficient with the capacity change to upset tuning appreciably.

In short-wave receivers this "hand-capacity" produces an even greater change in the tuning. As you are doubtless aware, a very small increase in the capacity of the tuning condenser produces a large change in the tuning on these short waves. If hand-capacity troubles are bad in a short-wave set, reception is quite hopeless, and the receiver has to be re-designed in order to eliminate such trouble.

Depends on Design.

NOW, experienced amateurs, knowing the root-cause of hand-capacity trouble, take precautions when building their receivers to prevent movements of their hands from affecting the receiver. The surest remedy, in almost all cases, is quite simple, and consists of ensuring that there is always an earthed conductor between the operator's hands and the coils and condensers of the receiver. You will immediately think of receivers having all-metal panels, which from experience you know to be free from hand-capacity troubles. The complete freedom here is due to the fact that there is a fixed small capacity between all components inside the cabinet, and the metal panel. Since this is earthed, anything also at earth potential on the dial side of the panel cannot make any difference at all to these capacities of component to earth, so that "hand-capacity" no longer affects the tuning of the receiver.

Now some circuits where all panel components are at earth potential lend themselves to the use of a metal panel quite readily, but it would be fatal to use anything but an ebonite panel where the panel components are not all at the same potential. We always try to juggle with the circuit so that all panel components shall be at earth potential; but in some circuits, where no part of the tuning system is at earth potential, this is impossible.

In the old days the keen experimenter would have fitted the two condenser dials with long "extension" handles; but we more fortunate moderns can now purchase special dials which, besides giving a slow-motion adjustment, have a fairly large engraved metal dial which is insulated from both sides of the condenser. This dial can, therefore, be connected to earth, and we then have the equivalent of a metal panel just in front of the condenser itself, with the added advantage of a slow-motion adjustment.

If your receiver is at all prone to "hand-capacity" trouble and has an ebonite panel, fit these dials, when your troubles will in most cases disappear. Take care, however, to choose a reliable make having really good insulation between the shielding dial and the part which grips the condenser spindle.

Short-wave receivers are very much more liable to "hand-capacity" effects than receivers tuning over the broadcast waveband. Unless a few simple precautions are taken in construction you will find that the tuning may change appreciably in spite of earthed-screen dials. Also, signals from distant stations very often weaken and sometimes disappear altogether when the operator moves a short distance away from the receiver. This is due to the capacity coupling via the headphones producing a very slight change in the capacity of the tuned circuits. This effect is only noticeable on short waves.

Arranging the Lay-out.

THE necessary precautions are to see that the tuning coils are placed as far to the rear edge of the baseboard as possible. The coils are then farther away from the influence of the operator's body, and, for this reason, it is advisable to use a wide baseboard when constructing a short-wave set. If the circuit does not permit a metal panel to be used for the reasons mentioned above, it is a safe plan to mount the tuning and reaction condensers well back on the baseboard, say, 6in. from the back of the panel, and link them to the dials with lengths of ¼in. ebonite rod.

Obviously the best precaution of all is to use a circuit which permits of a metal panel being employed and then to construct a cabinet out of sheet aluminium or copper, when the receiver will be completely screened from outside interference. Take care, of course, that the metal does not come very near the coils anywhere.

"Body-capacity" via the 'phones to earth can also be very troublesome in a short-wave receiver, and the only cure is to reduce to the lowest limits the back-coupling to the tuned circuits. Mere screening is useless in these cases and may even make matters worse. The more valves there are between the detector stage and the 'phone terminals, the less trouble there will be from body capacity. On some short-wave transmissions two L.F. stages following the detector will often provide sufficient volume to work on a loudspeaker so that no trouble occurs, as the 'phones are not then worn.

The Choke Cure.

AS many transmissions cannot be received at this strength we must still wear 'phones and overcome our difficulty by inserting H.F. chokes and earth-shunt condensers in the anode circuits in order to keep as much H.F. energy as possible out of the L.F. amplifier. This will often effect a cure, but in obstinate cases where, for example, a good earth connection does not exist, you will find that an H.F. choke in each 'phone lead will assist matters.

Our Crystal Corner

By "Galena"

Full Wave Crystal Set.

I HAVE constructed the full wave crystal set which was described in the "Radio Record," dated December 14, 1928, and I am experiencing a little difficulty in connection with same. I am using carborundum detectors, and find that although I obtain good results (R4 on speaker) with one detector, the volume is considerably reduced when the second detector is inserted. I have tried changing the detectors and have also reversed the ends, but have not been able to make any improvement. The condensers are .0005 semi-circular pattern, and the set can be tuned in with either condenser, the best results being obtained when the moving plates are nearly all out on one condenser, and three-quarters in on the other. I am 2½ miles from 2YA, and have a good aerial and earth, the latter being similar to the Pearce system, but on a smaller scale.

I shall be greatly obliged if you will advise me how I can obtain an increase in volume when using the second detector, also if better results would be obtained if complete carborundum, stabilizing units were used. You may be interested to hear that the "Low-Loss Crystal Set," described in "New Zealand Radio Handbook No. 6," has given me slightly better results than those obtained from the full wave set.—"PUZZLED" (Wellington).

ANSWERS.—Apparently the crystals are not perfect. Test by the phone and battery method described recently in the "Beginner" columns. Test by applying the battery lead to each end alternately. Only in one position should there be a click. If there is a click in both directions the crystal is at fault and defeating the object of the two crystals.

It appears too, that the coils are not matched. Try a few less turns on the coil, the condenser connected with which reads nearly 0.

Stabilising units would be an advantage but would not cure the trouble at present evident.

Full-wave Rectification.

IN our special issue "Pentode" described a full-wave crystal set by employing two crystal circuits. By this arrangement double-strength signals could be obtained. Some correspondents who have made this set seem to have experienced a difficulty. The signals have not been so strong as they had expected, and they have been consequently disappointed.

There is one drawback in this type of circuit, and that lies in the difficulty of getting both crystals to act with equal efficiency as far as rectification is concerned.

If, for example, one crystal is not set at its most sensitive point, this may mean that some of the high-frequency current is getting through from the wrong direction, thereby nullifying a proportioned part of the current that is passing in the correct "conducting"

direction, leaving the 'phones, to respond only to the difference or unbalanced portion of the normal current.

The current, however, that is getting through from the wrong direction is evidently shorting out the second crystal and robbing it of its normal quota of the reversed voltage, so that the signal intensity is much lower than it should be.

It is necessary, then, to get a pair of good crystals, equal in sensitivity, which will pass current in one direction only. A test for this has been described above. Constructors who take this

READERS in difficulty, or

who feel they are not getting the best from their crystal should send in their difficulties.

They will be discussed in the Corner, that is providing they are not too particular to one case, when they will be replied to by post. If an owner has found a circuit he considers superior to the usual, send it in and if worth publishing it will be passed on to others. Remember, address all inquiries "Technical Editor," and mark the letters "Crystal Corner."

caution should experience little difficulty in obtaining loudspeaker reproduction from a nearby local station.

Exceptional Results.

ABOUT a month ago I built a crystal set from which I have had remarkable results, using gauge 28 for aerial wire. The aerial was put up in the room and, using a wire along the floor as an earth, I received 2YA as loud as the set on the outside aerial with a good earth.

In the city I worked it off a frame aerial with fair volume. At Eastbourne I used an aerial 4 feet long with a coil of wire at the end (without insulators) and the guttering of the verandah as an earth. From this I received remarkable results. One Saturday night I used the wire mattress as an aerial and used no earth. The results were fair and I could distinguish every word the announcer said.

The set to me seems to be a "freak." The set consists of two spiderweb coils and the distances between them can be adjusted, a .00025 variable condenser, and a semi-permanent detector. I have also another excellent crystal set, but the new set overshadows it. Hoping you are interested, and wishing you every success with your paper, which I consider the best radio paper for the money in N.Z.—I enjoy every word of it.—G. T. KING (Island Bay),

Notes and Comments

By
"SWITCH"

ON two or three nights recently Wellington listeners received a pleasant surprise at the improvement in reception of the Australian stations, but their joy was short-lived, as conditions lapsed into weak audibility again. The consensus of opinion locally is that reception from Australia this summer is easily the worst for five years past.

ATMOSPHERIC conditions have been very uncertain for some weeks, and in Wellington even 1YA, Auckland has on frequent nights been only about a third as loud as is normal. Yet 3YA, Christchurch, remains a faithful servitor of the Wellington listeners when all the other "outside" stations are weak. Most of us get 3YA with really excellent loudspeaker volume in the afternoons, and without a trace of fading.

A PLEA for the repetition occasionally of Cattelby's composition, "Bells Across the Meadow," per gramophone record from 2YA, Wellington, has reached "Switch." The listener urged his plea with the remark, "I believe the majority of music-lovers will agree with me that Cattelby possesses the rarest gift of descriptive effect in his melody and harmony, and 'Bells Across the Meadow' with its haunting effect is more wonderful than even his enchanting 'Voice of the Bells,' which is a veritable masterpiece acclaimed the world over."

IT was reported recently that Mr. Ken Martin, of Hataitai, a Wellington nearby suburb, had KFON, Long Beach, California, on his loudspeaker from 9 p.m. till 9.30 p.m., when he switched across to hear other stations. The writer questioned Mr. Martin about the report, which he verified. This is a notable feat for a Wellington listener at this time of the year. It may be stressed, however, that Mr. Martin resides just outside the "bowl" of hills encircling the city, which rather shuts out reception of the Yanks. This is a facsimile of Mr. Claude Grey's. It is an American five-valve (dull-emitter) with two stages of tuned radio frequency—a set with a reputation.

JUST why some dull-emitter valve sets have a penchant for reaching out to prodigious distances has puzzled some listeners, and various theories have been suggested. Apart from the

high-grade quality and efficient circuits of some of these sets, their long-distance efficiency is contributed in no small degree to the characteristics of the dull-emitter valves, which are particularly effective in the radio frequency stages. The writer remembers when the Browning-Drake people strongly advocated the use of a low-temperature valve for the only radio frequency valve used in their famous circuit.

FOLLOWING the advice of the Browning-Drake people the writer inserted a four-volt valve for a five-volt valve in the radio-frequency stage of his Browning-Drake circuit, and found long-distance audibility increase about three-fold. Stations which previously yielded faint loudspeaker audibility promptly came in with great volume. Reception was of such a nature that a leading official of the Amateur Radio Society of Wellington, who heard the set perform, was almost incredulous until he heard the call-signs of the various stations.

MUCH depends on the valves that are used in a set, and many listeners are apt to give little consideration to this aspect of broadcast listening, although long-distance reception is more sought after in New Zealand than probably any country in the world. It is trite to say that no purchaser of a multi-valve set in New Zealand is satisfied unless it can efficiently span the 1200 or 1300 miles to Australia. One Wellington professional builder makes a point of testing several valves in various positions in each set before delivering to the purchasers.

THE New South Wales Broadcasting Company have just commenced a new idea in which on every Wednesday night 2FC will devote the whole of its programme to classical music and on the same night only "popular" music will be put on the air by 2BL. In Wellington households one can imagine the dials being shifted backwards and forwards from 2BL to 2FC and vice versa so that the particular taste of each member of the family will be catered for.

A LETTER, signed "F. P. Fitzmaurice, Warrawee," published in the Sydney "Wireless Weekly," shows the attitude of many listeners:—"I know

the stations have to cater to all tastes; but I just want to say what I think a lot of people are thinking—that is, that there are too many interruptions to good programmes. They give us good jazz songs and comedians now and then, but they are always pushing in some pianist or singer in the middle of the things we understand. To anyone whose tastes are to my way of thinking this is most annoying, and I cannot remember one night lately when I have not had to chop and change among the programmes to find something really good. It doesn't say much for the stations' organisation." Of course, what "something really good" is depends on the taste of the listener. The above gentleman inclines to jazz songs. We have the same difficulty in New Zealand.

MR. LEN. MAURICE, who has entertained many of us Wellington listeners from Australia with his deft piano-playing of jazz with vocal lines, has done a lot of gramophone recording across the Tasman. His gramophone recording of "My Blue Heaven" has been sold to the extent of 100,000 discs!

AN unusual query was put to "Switch" a couple of days ago by a beginner. Strange how novices concentrate on unthought-of details which, not infrequently, are important. He queried, "Should I disconnect my 'A' battery without first turning down the filaments with my rheostats?" Various authorities on valves were sought, and at last "Switch" found a definite warning that suddenly disconnecting the "A" battery without first dulling or extinguishing the light of the filaments considerably shortens the life of the valves.

MR. FRANK JOHNSTONE, the 'cellist who was formerly in Wellington, has been performing in solo work recently at 3LO, Melbourne. One of his items was Popper's "Hungarian Rhapsody."

ANOTHER query which was shot at "Switch" recently came from a friend who had just extinguished for ever and ever five beautiful valves through accidentally sending the "B" battery current through the filaments of his valves. It was a painful episode for him, as he said he gone to much trouble to have each valve tested for each socket of his set. He wanted to know what was the cheapest and easiest method of preventing such a disaster again. A tiny pocket torch bulb connected in series with his "B" battery lead would prevent a repetition of his valve massacre.

"WHERE do all the dead valves go?" asked a Wellington radio fan, talking to a well-known dealer a few days ago. The dealer showed him a couple of petrol cases full of "dead bottles." He explained that the bases of old valves sometimes came in handy for making plugs for coils, and as plugs for detector-valve sockets in making electric gramophone pick-ups. He had also seen one used as a plug for connecting the "A" bat-

tery to a set. Each couple of prongs had been connected together, and when the base was pushed into a socket a complete circuit was made.

AT a meeting of the Amateur Radio Society of Wellington a few weeks ago the question as to the best time for dinner music for country listeners was discussed. A New South Wales farmer recently wrote to the Press that the best time for early evening transmission for the workers on the land was from 7.15 till 8.30 "as during the summer months people in the country work late." The time mentioned is equal to 7.45 till 9 p.m. New Zealand summer time. It is an interesting statement.

ANOTHER broadcast listening circuit has been added to the equipment at the Wellington General Hospital. The system has been extended to the big block of new buildings and some scores of more patients are now able to enjoy radio. By degrees it is hoped to obtain sufficient funds to equip the whole hospital. The medical superintendent and nurses are enthusiastic over the benefit the patients are obtaining from the diversion created by broadcast listening. Among the male patients the sporting news is particularly popular.

A FRIEND who is visiting Wellington asked "Switch" to give publicity to his experience in visiting the studios of 2YA, Wellington. "Although a complete stranger," he says, "I was most cordially received by Mr. J. Davies, the studio director. I was extremely curious to see how things were worked in the station which we have listened to for many months out in the way-back. Mr. Davies showed me every interesting particular of the studio, and I will have a lot to tell my family and friends on my return home."

THE American papers occasionally make reference to complaints from "old-timers" that long-distance reception is not what it used to be. Some Yankee listeners have endorsed this in letters to the radio press; but a few have suggested that they had been spoilt by the excellent winter reception, and when summer came along they were disappointed because things had gone off a deal. This statement was challenged by other correspondents, who quoted their logs of previous summers to prove definitely that reception was much inferior to previous summers.

THE burlesques of broadcasting put on at 2YA, Wellington, have made a distinct hit. Several listeners have told the writer that they have been much amused with the burlesque of a broadcast from 3LO, Melbourne, and would like to hear some more. They regarded the humour as very apt, and there was a touch of sound reason in making fun of some of the stuff which one hears on the air occasionally. It is not so long so long since a missing cow was sought for by a broadcast announcement from a certain Australian station! And it certainly caused the cow to be found shortly afterwards.



Call and hear the latest model SONORA. Unequalled for quality of tone. Buy a SONORA and you will really enjoy Radio!

Arrange for a demonstration TO-DAY

F. J. PINNY Ltd. 58 Willis Street, WELLINGTON.

New Broadcasting Headquarters

Studio Accommodation for 1000 People

ARRANGEMENTS have been completed for the transfer of the headquarters of broadcasting for the B.B.C. from Savoy Hill to Portland-place, Oxford Circus, as soon as a new building is ready. The site, with an area of about 20,000 square feet, is in the form of a peninsula facing south, visible from Oxford Circus. The western facade will dominate Portland-place, and the eastern front will face Langham Street. The design of the building will be simple, almost severe, depending for its effect more upon the grouping of masonry than upon profusion of detail. It is estimated that the new building will provide more than 100,000 square feet of useful floor space. Some office space and some ground-floor shop space will be available on short lease, to be recovered later if necessary.

THE provision of studios is naturally the primary consideration. Of the nine studios, four will be more than double the size of the largest studio at Savoy Hill, which is 44ft. by 25ft. In addition to these, there will be a super-studio, three stories high, of about 4000 square feet, which, together with its gallery, will be capable of accommodating an audience of 1000 as well as a large orchestra. All the latest ideas of acoustical treatment are to be embodied in this super-studio.

The studios and their suites will be insulated from all external noise. They will be grouped one above the other in a vast central tower of heavy brickwork, ventilated artificially, and protected from street noises by the complete outer layer of offices. Wide corridors and thick brick walls will insulate the studios from the offices. In order to eliminate sound interference between studios, the central tower will contain no vertical steelwork.

The estimated cost is between £400,000 and £500,000. It is hoped that the building will be ready for occupation in 1931. The enterprise is being financed by a syndicate on terms favourable to the B.B.C., which retains an option to purchase if and when this appears desirable. The syndicate's architect is Lieutenant-Colonel G. Val Myer.

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EXIDE SERVICE STATION
79 Kent Terrace, WELLINGTON.

Sporting Lectures

MR. D. MCKENZIE, who is to give a series of lectureries on the laws of cricket, is one of the best-known authorities on cricket and Rugby law in the Dominion. Ever since 1915 he has been the president of the New Zealand Rugby Referees' Association and has delivered lectures on the laws of the game in Napier, Marton, Nelson, Blenheim and Motueka, and a paper from him on any phase of Rugby law is cordially appreciated by members of the Wellington Referees' Association. He is an ex-secretary of the Poneke Club and was the last honorary secretary of the Wellington Rugby Union, having occupied that position from 1900 to 1907. On his retirement the office of the secretary of the Rugby Union was made a paid position.

Dan McKenzie—to give him the name he is best known by—has been a senior umpire in Wellington since 1897, and during that period of 31 years has made a big reputation for himself and has had many experiences. It has been his pleasure to reach the highest standard, being appointed to act as umpire in matches between several of the Australian and English teams in their matches against New Zealand during the years.

For the last twenty-five years he has been almost continuously a member of the Management Committee of the Wellington Cricket Association, and his length of service far exceeds that of any other member of that body.

It will thus be seen that Mr. McKenzie is fully competent to chat on the laws of cricket, and the members of the Wellington Umpires' Association are always eager to listen to him discussing the laws of the game. Recently he delivered a lecture to members of that body, and they thought so much of it that it was the general opinion that the lecture should receive a wider publicity. And the result of discussions is the fact that 2YA is to be used as a method of broadcasting Mr. McKenzie's talks on cricket laws.

Union Jack as Swaddling Clothes

WHEN the announcer at 2BL during early morning sessions conceived the idea of playing the National Anthem after reading the latest bulletin concerning the King's health, he unconsciously struck a responsive chord in the hearts of many listeners. Quite a large mail has been received from all parts of the State appreciating this little action, and many of the letters are most interesting.

One gentleman from Gosford, referring to the Boer rebellion, writes:—"Although practically bed-ridden, I tried to do my bit. The night the Boer rebels were reported to be in our vicinity, and a raid of my farm was imminent, my son was born. Our possessions were scanty, and the old flag 'That has braved a thousand years the battle and the breeze' was commissioned to cover the little lad. An historic flag this, too, as it flew over the British camp at Bulawayo during the Matabele rebellion, and has been hoisted on many appropriate occasions since."

Radio Dispels Loneliness

Salient Proof of Worth of Broadcasting

RADIO has proved its worth in many directions, and not in the least is that important function of dispelling loneliness, for few people realise the tragedies and struggles there are behind the trim casement curtains of many of our suburban homes.

There is a case known to the writer of a family of three elderly sisters, who live together, as the relic of what was once a gay and happy home in a large house. The war years have come and gone; the dwindling value of their investments; the change in the attitude of domestic help, coupled with long years of nursing both father and mother, have brought these good souls one reward only—a mellow, but lonely satisfaction of their own eventide.

Their needs are not great; in fact, it would be difficult to find a more simple life than theirs. They sometimes dream of the might-have-beens as we most of us do, but their one joy and refuge is the wireless. "Dear mother loved the headphones when she was unable to get up from her bed," the white-haired eldest sister will tell you, if you know her well. Their lives hang on the invisible threads sent out on the air; their clocks are kept to time, and the announcer's "Good night" sends them upstairs at night with a happy heart.

The outside world has no place here, except through the air. The traffic is much too dangerous for them to go abroad, beyond the local shops, and should one of them go to town, there are blazing lights and anxious eyes behind the curtains, until the wanderer returns to the fold. With eternal needlework they pass the hours away, following the programme with that silence which needs no conversation to tell of its love. They were lonely until this magic charm came to their fire-side, and now they can forget some of their sorrow. How many are there similarly situated?

house, this poor, faint heart was crushed and stricken with nerve trouble.

A kindhearted handyman in the house gave her a portable set to keep beneath her bed. The landlady was fussy about wires, but the lonely soul left the set untouched for days. Then one day, when it rained and stormed outside, she turned the tuning knob for help. There is now a new and brighter look in her eyes, and she no longer suffers from nerves.

LONELINESS is, perhaps, the greatest puzzle of the age. Men and women suffer alike, but probably women most. Some will find refuge in books for a while, others break into an orgy of hectic entertainment—seeking in a last despairing attempt to keep in the swim. But youth and the speed of modern life make them return to a quieter round of life.

Then loneliness returns with unabated ferocity, and they are tired. Tired of trying, until the warmth of the spoken word and wireless music expresses their pent-up feelings, and the intimate association of the programmes floods and thaws their frigid heart-strings anew.

THERE have been several admirable campaigns for the installation of wireless sets in hospitals, lighthouses, and lightships. I should like to see a secret society to give every lonely lady a small, simple set for her very own this Christmas. A good friend of mine who has ten sets, in various stages of construction in his house at the present moment, confided in the writer that he kept his most efficient and helpful ladyhelp, who was a real wonder with the kiddies, by the simple process of making up a special quiet set for use in her own room, whenever she felt inclined. The tip is passed on to others; it's worth thinking over.—Peter Martin.

ANOTHER lonely soul, known to the writer is a middle-aged lady, who has tasted life and publicity to the full. Through no fault of hers, perhaps, she figured in a Divorce Court action. Only able to save enough from the wreck to rent a small bedroom in a suburban

"I DON'T go in much for racing," confided a listener, to 2FC, the other day, "but I've been watching the papers, and I think this Limerick is a good spec!" A good many others who do follow the sport of Kings thought so, too.

Right Royally Entertained

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Mr. A. P. Morrison (Brooklyn) writes:—

Having had so many requests from listeners from all parts of New Zealand (for my underground aerial) perhaps if space permits, you will publish a description and diagram for me in "Radio Record."

What is required for the aerial is this:—Eight copper pipes four feet long and 1 in. in diameter. Eight copper balls as used for the cistern. Each pipe to be three feet apart, laid down to form a circle, each copper ball to be spaced 1 ft. 6 in. from each pipe, connecting wire from ball to pipe until all are connected together, using 7.22 gauge wire. The whole thing to be sunk into the ground four feet. The balls to be sunk into the ground a foot deeper than the pipes. It is best to dig your hole first and lay your material out, and connect up. Take your connecting wire from the nearest possible joint to your receiver, a heavily insulated wire to be used for such. A counterpoise aerial must be used heavily insulated, preferably 20 feet from the ground. I have drawn a diagram of the whole thing, so as to give listeners a guide to work by.

In Mr. Sellens absence, probably my notes for the week may be of interest.

I do not know if KFON California possesses a s.w. transmitting plant, but on Friday 4th, from 7.30 p.m. till 8.30 p.m. this station was heard on approximately 60 metres, but throughout the programme of music, no mention was made about the possessing of s.w. plant, so think it was the fourth harmonic of KFON.

Mr. Pascoe, of Auckland, was enquiring through "Radio Record" about a s.w. station working on 60 metres, and I stated in some of my notes that I thought it to be a harmonic of one of the Australian stations, he has written to me since and mentioned that he was sure it was not an Aussie harmonic. Well, I give the mystery up. Has any other s.w. listener heard this station—from 7.30 p.m. till 8.30 p.m., he is supposed to be working.

Sunday, January 6.

W2XAF was heard at 3.30 p.m. with their usual dance programme at R5, but increased to R8 before closing down at 5 p.m.

KDKA at 3 p.m. was very weak about R4, heard again later with their message to the Byrd expedition strength R8.

A station heard at 6 p.m. on 32 metres, sending out American Stock Exchange reports, music was also heard. This station was still on the air at 10 p.m. I think it was W2XAF Rocky Point, because the noise was familiar, strength about R5 to 6. RFM was heard in the evening with talk and music R8 to 9.

Monday, January 7.

6.30 a.m. 7 LO, Nairobi, was transmitting music at about R4 to 5.

3LO, Melbourne, could not be found. I do not know if the fire has any effect on that station. At 9.5 RFM was heard with their usual long talk.

POLL 18.4 metres was heard at 10 p.m. transmitting music, afterwards calling ANE Java, strength R8 to 9.

Afterwards ANE was heard also on music at R8, but was spoilt by their signals swinging back; stations afterwards carried out duplex telephony.

Tuesday, January 8.

6.30 a.m., 7LO, R4 to 5, but spoilt by morse. 6.45 a.m., 5SW at R6; a

talk was in progress, but did not have time to hear what it was all about.

At 10.55 p.m. both ANE and POLL were heard again, with music and duplex telephony, both R8.

11.20 p.m.: A carrier was heard on 2ME wavelength, but nothing was heard from it.

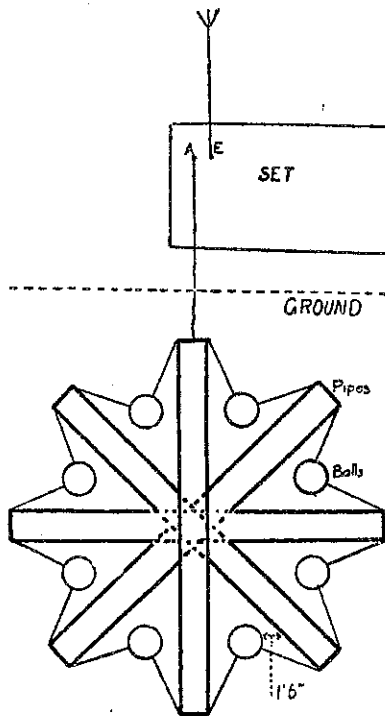
RFM was on with some good music, R8.

Wednesday, January 9.

6 a.m.: 7LO was very weak at about R2 and did not increase in strength.

5SW was at good strength at about R6 to 7; some good music being heard.

PCJJ was not heard by me. I do not know whether he was on the air.



Mr. Morrison's Underground Antenna.

A weak carrier was heard on 22 metres with a man talking in a foreign language, but was too weak to get its call.

No short-wave stations were heard in the evening.

Thursday, January 10.

Did not rise early enough to hear anything in the morning.

RFM was heard in the evening at good strength, R9.

2HC, Bondi, testing, R6, at 10.30. Also PK2RC testing with PK2J2, which I presume are Australian amateurs.

At 11 p.m. a foreign station on 45 metres with a good selection of musical items and vocal, but the language was difficult to understand, although modulation and strength were good, R7 to 8.

PCJJ CHANGES CALL.

FROM January 1, 1929, the call sign of Philips short-wave broadcasting station will be changed from PCJJ to PCJ, in accordance with the regulations drawn up at the recent Washington conference.

MR. N. C. FITZGERALD, Gisborne, has sent me, writes Mr. Sellens, the following particulars which he received from the respective stations:—

Round the World on Short Wave

3AN transmits on 40 metres on Sunday, Tuesday, Thursday and Saturday from 11.30 p.m. till 1.30 a.m., New Zealand summer time. Address for reports: Sourabaya Radio Society, c/o M. W. M. Brussee, Sourabaya, Java, Dutch East Indies.

PKI, on 39.5 metres, is on the air every Monday morning from 2 a.m. till 4 a.m., New Zealand summer time. He usually works duplex telephony with 6AG, Perth, from 3 a.m., during these transmissions. Address: A. C. de Groot, Box F, Bandoeng, Java, Dutch East Indies.

Reports of reception are asked for by both of these Java stations.

A NEW record in radio reception has been established by the Canadian National Railways in receiving English short-wave transmissions on a moving train. The Continental Limited, moving eastward from Vancouver to Montreal, had installed on the observation car "Fort Osborne" a special short-wave receiver capable of being used for the short waves and the general broadcasting bands. While the Continental Limited was in the station at Vancouver at 8.30 p.m., Pacific time, the operator picked up 2XAD, Schenectady. On the journey towards the east various short-wave stations were heard, but that best received was 5SW, Chelmsford, England, which came in while the train was passing Favel, 1219 miles west of Montreal and situated between Sioux Lookout and Reddick, Ontario. The operator held the English station for 15 minutes, and then took up a popular programme. The time of reception was 4 p.m., Central time.

A New Short-waver St. Helena to go on the Air

A HIGH-POWERED short-wave broadcasting station is soon to be erected at St. Helena, in the North Atlantic Ocean.

The organisers of the station state that they hope to have it on the air about March or April. A power of 10 kilowatts will be used as a start, and all the apparatus will be supplied by the English Marconi Company. It is hoped tests can be carried out with a ship now in New Zealand waters, which will make the station widely known. Relays will be made of English broadcasting stations, principally 2LO, and in New Zealand the reception should be better than that from 5SW.

The island of St. Helena is rocky and barren, with a very high mountain in the centre. On this mountain will be erected the aerial. This certainly should be an ideal position. The aerial will be a one-mast type, and the transmitter will be housed just beneath it. On the other side of the island, at the foot of the hill, will be the studio, and about a mile away the relay station. This will consist of an extremely powerful receiver and apparatus to retransmit the music to the studio.

Static is very bad in the North Atlantic, however, and this may affect the relaying.

On Short Waves The Use of Adapters

SHORT-WAVE telephone is being used by a great number of stations in many parts of the world, and any owner of a valve set with the aid of a short-wave adapter may listen to these stations. The chief difficulty appears to be that operators of broadcast receivers who are used to comparatively easy tuning and strong signals from nearby stations find extreme difficulty in getting a short-wave set to function. It should be clearly understood that in order to tune in these long-distance stations the detector valve must be capable of oscillating.

It is often found that if a short-wave adapter is apply to the broadcast receiver, that the reaction condenser of the adapter can be turned all in without causing the detector to oscillate. There are two conditions which are likely to cause this.

The valve used as a detector in the short-wave adapter may be unsuitable, or the plate pressure may be insufficient. A great number of broadcast receivers will work very satisfactorily with from 16 to 22½ volts on the detector, and as the detector valve is taken out and replaced by the adapter, the same plate pressure will be fed to the detector in the adapter circuit. In order to bring the detector in the adapter circuit into a controllable oscillating condition a B battery pressure of from 45 to 60 volts is frequently required. It will be clear then that it will be necessary very often to change the detector tap on the B battery in the broadcast receiver to a higher value if the detector tube in the short-wave circuit fails to oscillate.

The reception of telephony is largely a matter of perseverance. The detector must be in an oscillating condition to first find the carrier wave of the distant station. It is here that the skill in tuning in the telephony is required. It merely consists of gradually reducing the oscillation and compensating on the tuning dial until the whistling carrier is smoothed out and the voice or music is cleared up. Provided the detector is capable of oscillating and being throttled by the control condenser, and that the correct coils are in for the particular wave length, it is desired to receive no difficulty should be experienced after a little practice in finding the international telephone stations.

CURIOUSLY enough, the large manufacturers do not complain of the competition of these private builders, as it proves that these privately and specially made sets are generally ordered for locations where special conditions have to be met and arrangements have to be considered by the expert on the spot—in regions, for example, where extreme congestion on the part of broadcasters renders extra selectivity necessary.

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