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? WHAT TONES CAN YOUR SET REPRODUCE ?

Special Test for the Benefit of Listeners from 2YA

ALL sounds are composed of vibrations. Some sounds are beyond the capacity of human ears to detect. Some folk can hear better than others—their detector apparatus is superior. It is just the same with radio valves and speakers—particularly with speakers. Some will reproduce only up to a certain number of vibrations which means that sounds exceeding those vibrations are not reproduced and the listener hears nothing at those points. He may thus be losing the finer qualities of the music being broadcast.

THE quality of your set and its capacity to reproduce various vibrations can be tested on Tuesday evening, July 24, through a special transmission from 2YA. Every listener concerned with quality music should make a special point of benefiting by this test.

ON Tuesday evening next a transmission test by 2YA will claim the attention of all listeners, for the test will relate to the efficiency of receiving sets, particularly having reference to the quality of ear-phones and loudspeakers.

It is to the interest of all listeners that they should know whether the quality of the music they receive is comparable with the quality of the music as it is transmitted from the station.

This can be tested in a scientific manner, for scientific principles underlie all music. The pitch of a note depends upon the vibration rate, and it is not every mechanical apparatus such as an earphone or loudspeaker which can faithfully reproduce those vibrations. Where the reproducer fails on such occasion the full beauty of the music is lost.

IT is recognised that music depends for its interest on two fundamental characteristics—quality of tone, and rhythmical character in its widest sense. It thus follows that if a loudspeaker is incapable of conveying quality to the listener, he is thrown back upon rhythm which is the most elementary characteristic of music, as depicted in the beating of drums by savage tribes. This is probably one of the reasons why many listeners feel dissatisfied with musical programmes, and particularly why there is such a demand for rhythmical music such as jazz. This demand for rhythm does not indicate that the listener has not the capacity to appreciate beauty of tone, but that possibly he never hears it from his loudspeaker.

SCIENTIFIC PRINCIPLE OF MUSIC.

IT is in order that listeners may have an opportunity of judging for themselves as to whether their loudspeakers are capable of responding to the vibrations which are necessary in order to obtain a true tone, that the Broadcasting Company proposes to put over a series of tests. These tests will consist of the transmission of various vibration frequencies ranging from the lowest fundamental to the highest harmonic.

The Director of Music of the Radio Broadcasting Company, Mr. W. J. Bellingham, will be present when the tests are being carried out. The changes in vibrations will be made during the transmission of a lecture by Mr. Bellingham on the nature and

purpose of the tests. He will announce when each change in frequency is made. These transmissions of different vibration frequencies will each last ten seconds, and it is important that listeners should

ONE GUINEA PRIZE

This frequency test is of outstanding importance in enabling listeners to check up the capacity of their sets. A coupon recording the different frequencies which will be given appears on page 15. On the occasion of the test on July 24, listeners should check reception from 2YA on this chart (page 15) and note the results.

To encourage close observation, we will award **A PRIZE OF ONE GUINEA** to that listener who sends in the most carefully compiled and complete coupon, and the most informative recital of the lessons learnt through the test as to the capacity of his or her speaker.

Address entries to Editor, Radio Record, P.O. Box 1032, Wellington. Closing date August 1. Award will be made as early as possible.

remember that while there will be a difference in the vibration frequencies of each transmission, they will all have the same volume and should all be received with the same volume. If the listener hears nothing, he will realise that his set is incapable of accepting this particular frequency, and he will therefore be able to draw his own conclusions as to the ability of his loudspeaker to receive the music which is being transmitted.

THE scientific principle on which it is all based is particularly interesting. The pitch of a note depends upon its rate of vibration. Middle C at concert pitch has a vibration rate of approximately 27, and the highest note approximately 4320 vibrations. These vibrations represent the vibration rates of the fundamental note.

It is readily realised that the same notes on different instruments have different qualities, but it is not generally known that this quality depends on the fact that a note when it is sounded contains in itself other notes which, though not appearing as different notes, actually make the note appear to have a different quality. It is probably very difficult for the layman to understand that what he has always thought to be one note is really a combination of notes.

THEORY OF HARMONICS.

THIS combination of notes is called harmonics. The table illustrating the harmonics which are heard simultaneously with the sounding of middle C on the piano, clarinet, flute (softly blown) and cornet, together with their frequencies will be found on the leader page—p. 4.

IF we take as an example a note two octaves above middle C with a vibration rate of 1080, the seventh harmonic on this will have 1080 multiplied by 7 (7560) vibrations. It can readily be understood, therefore, that in order to obtain the actual timbre or quality of a note it is essential that the receiving instrument must be capable of receiving the highest possible vibrations, otherwise, if these high vibrations are eliminated, every instrument will have more or less the same characteristics, and it will not be very easy to determine the different instruments playing in an orchestra. Again, on the other hand,

with respect to low notes, if a loudspeaker has not the capacity to respond to the lowest vibration, it may respond faintly to the other harmonics which are contained in this low note. That is to say, it is quite conceivable that on a speaker which would not accept the fundamental of a double bass, the harmonics of its notes might come through, but at an octave or possibly two octaves higher. The obvious result of this would be that a double bass could sound very much like the pizzicato on a second violin, and it would therefore be impossible for such a loudspeaker to show any balance.

WHAT THE TEST WILL PROVE.

WITH speakers, therefore, which will not accept the lowest vibrations, it is impossible to obtain correct balance, and with speakers which will not accept the highest vibrations it is impossible to obtain other than a dull, characterless quality.

The number, order and relative intensity of these harmonics varies in different instruments and governs the quality of the instrument. The peculiar quality of the clarinet is obtained from the fact, as shown in the preceding table, that it sounds only harmonics of odd ratios. The cornet, on the other hand, gains its quality from the fact that it sounds very high, piercing harmonics, and the flute from

(Continued on page 4.)

Sets in U.S.A.

ESTIMATE OF 12,000,000

AUDIENCE OF FORTY
MILLION

ESTIMATES of the radio trade now place the number of receiving sets in use in the United States at nearly 12,000,000, serving an audience of not less than 40,000,000 persons. Figures on the number of receiving sets privately owned have recently been compiled by a number of bodies at the request of the Federal Radio Commission, which is anxious to furnish Congress with dependable figures on the number of receiving sets in use in the United States.

Figures compiled by branches of the trade indicate that 7,500,000 standard receiving sets, capable of delivering loud speaker volume, are now in use in the country, in addition to a large number of crystals and one-tube receivers of obsolete type, which are still in wide use in rural districts.

Few persons, even in the radio industry, it is pointed out, realise the number of small crystal sets which have been put into circulation at premiums. One group of banking institutions is declared to have distributed 200,000 of these sets, combined with customers, saving banks. Other large quantities have been sold to customers through chain stores and mail order houses.

Among standard receivers at the present time, alternating current sets in cities constitute 90 per cent. of all the sales, it is estimated. One large manufacturer has disposed of approximately 200,000 such sets since December 1, 1927, and a second maker is following close behind with nearly the same output during the last six months.

Short-Wave Growth.

LISTENERS on the broadcast band are being augmented by the steady demand for short-wave facilities, mostly for international and commercial purposes. A group of radio engineers has been called in by the United States Federal Government Radio Commission for advice as to the assignment of short waves so that the maximum number of stations can be put on with the

least interference. At the hearing in Washington recently of short-wave applications it was revealed that there are applications pending for nearly 300 channels, while there are only about 55 to this country for assignment.

The Radio Corporation of America asked for 105 channels; the Postal Telegraph Company wants 34, the American Telephone and Telegraph Company four; the S.P. Radio Company three; and a group of newspapers 33 for press dispatches.

Some bitterness of feeling developed at the hearing when Joseph T. Pierson, of the American Publishers' Association, charged that the RCA was trying to prevent newspapers from getting channels in order that the R.C.A. might get their business. He claimed the RCA was trying to obtain a monopoly in the communication field. He also opposed the request of the A. T. and T. for channels on the ground of an alleged agreement with the General Electric Company, which was in restraint of trade.

On the other hand, representatives of the RCA declared that because of the fact that there were not enough waves to go around they should be assigned to companies which serve the entire public.

Members of the commission have not yet formulated policies about the assignments, but it is believed that they will grant licenses as soon as they have the views of the engineers.

It is recognised that there is need for action by the authorities of this country because otherwise foreign countries may assign stations to the waves, which would give them a prior claim.

An indication of this is contained in the fact that there has been a 50 per cent. increase in foreign stations since March 20, while there has been only a 2 per cent. increase in stations in the United States.

An opinion is being expressed by members of the Radio Commission that the short-wave problem should be disposed of before the broadcasting reallocation is taken up.

Should the opinion prevail, it would mean that the new allocation might not be made until September 1, at the earliest.

WHEN a filter circuit is used in the output of a valve received it does not matter whether or not the loudspeaker is connected the right way round.

What Effect?

SHIELDED-GRID VALVE

INFLUENCE ON DESIGN

WHEN the 322 type valve was first introduced more than one engineer was heard to remark, "It's an interesting and unusual tube, but what for?—what practical application can be made of it?" This attitude (says a New York exchange) has been considerably altered, and it is interesting in the light of this to attempt to predict just what effect it will have on set design.

The biggest "objection" to the valve is that it is a recent product and that relatively little is known about its possibilities and limitations. It is largely this fact that has led some American manufacturers to postpone the introduction of receivers using it. There is very definitely a danger of the recurrence of the A. C. valve flurry. The A. C. valve caught the public's fancy in America, with the result that the obsolescence factor was serious in the battery-operated set field.

There seems to be considerable justification for the belief, expressed by some American engineers, that the amount and type of publicity that the 322 type valve has received will result in a negative reaction to the sets that appear using it. Superlatives and hyperboles regarding it have been all too prevalent.

Manufacturers' Experiments.

A NUMBER of the leading American manufacturers have experimental models of receivers using the 322 valve. It is safe to assume that every laboratory worthy of the name has a number of experimental models of this type. There is a natural reluctance to placing these receivers in production until the trend of the consumer demand is better defined, however.

If even one large American manufacturer announces such a receiver the others will almost have to follow suit. Then, too, there is the possibility of pressure from the "kit" or set construction field, where such receivers are already appearing. Failure on the part of the large manufacturers to bring out a 322 valve receiver should result in better business for the kit manufacturers, since they can capitalise the publicity this equipment has received.

From a technical viewpoint the valve has very good possibilities, even though they fall quite a bit short of what the first articles on the subject led one to believe. The possibilities are best brought out by considering what was considered good performance in the radio-frequency stages only a year ago. A well-designed, neutralised stage usually gave a voltage amplification of about 7 at 550 k.c. and 14 or so at 1500 k.c. The selectivity per stage while satisfactory at 550 k.c., was frequently very poor at 1500 k.c. At the latter frequency the band passed was frequently 2.5 or 3 times that at 550 k.c.

Careful Shielding.

CAREFUL shielding was necessary to permit a stable high gain amplifier, and this shielding complicated the use of the balancing circuit with its associated leads. The problem of stability was in itself serious enough so that the introduction of a new valve permitting the same gain without a neutralizing circuit would have been very welcome.

Even those who are pessimistic about the 322 admit that an average amplification of about 20 a stage may be secured. Unfortunately, as in the case of the usual balanced stage, the gain is about twice as high at 1500 k.c. as it is at 550 k.c. This is due to the higher equivalent dynamic resistance of the tuned circuit to this frequency. Any lossier method which tends to overcome this, such as a grid-losser, results in very ununiform selectivity at the various frequencies.

Even 20 a stage is twice that obtained from good radio-frequency circuits last year. And the stabilisation problem is not acute at this gain a stage when the over-all gain is not unusually high.

To effectively use this added gain better selectivity is necessary. But this should not be serious, since the trend is toward the use of band selector circuits, in which a higher order of selectivity is possible without discrimination against the higher modulation frequencies.

Direct Filament Current.

ONE electrical objection to the valve for use in A.C. sets is that it requires direct current for the filament. This difficulty has been overcome both by the introduction of suitable rectifiers capable of supplying the necessary current and by the development of heater type 322 valves. Some of the independent manufacturers already have announced such valves.

Another objection to the valve arises from its physical construction. It is a difficult valve to manufacture uniformly on a large scale. This trouble was also found in making valves of the heater type, however, but this problem is said to have been solved.

On the whole, then, it seems that the 322 type of valve, or its A.C. filament type equivalent will have a marked effect on the design of radio-frequency circuits henceforth. Its use should result in more gain a stage, with less difficulty due to stabilisation when moderate over-all gain is used. Its use should not make present A.C. type receivers obsolete by any means.

Australia's Dilemma

TOO MANY STATIONS

MANY MORE APPLICANTS

THE New Zealand Government very wisely, in the interests of listeners themselves, has been extremely chary about granting licenses for new broadcast stations in the Dominion. The wisdom of this attitude will be made apparent by the difficulties already arisen in Australia owing to the congestion of the ether in some of the leading cities.

A Melbourne writer says:—

Overcrowded Now.

The reported statement of the Commonwealth Postmaster-General that there are 49 applicants for Class B broadcasting licenses may mean something not to be welcomed by listeners. The prospect of even six extra stations will not be cheerful news to many listeners who now have difficulty in cutting out the stations they do not want. Owing to the fact that many receivers in use are not very selective, listeners frequently complain that while listening to 3LO they are unable to cut out a station or stations transmitting at the same time, and there are only four stations now transmitting simultaneously in Melbourne.

Selectivity Problems.

In Sydney the conditions will be worse. There are now four stations in addition to the main stations. So bad were the difficulties of satisfactory reception there about two years ago that thousands of listeners cancelled their licenses as they were unable to get the programmes for which they were paying. The solution of the selectivity problems is a reasonable and scientific allotment of the wavelengths to the stations. If the wavelengths are too close to one another the result will be the chaos now causing so much trouble in America. There are so many stations licensed in cities like New York and Chicago, that the wavelengths are literally on top of each other, and only the most selective receivers can tune in to a particular station.

New Allotment of Wavelengths Wanted

There are only a certain number of wavelengths available for distribution, and the claims of stations in all States must be considered. Therefore, when considering what is needed by Sydney or Melbourne we must not overlook the conditions in other capital cities. And in addition the difference between wave lengths in stations in the one State must be on a safe basis. In Melbourne at present the four stations are on wavelengths respectively 484 metres, 371 metres, 319 metres, and 255 metres. If additional stations are to be started the difficulties will be of a more serious nature.

The only safe way in which to consider the distance between each station in the ether is by their respective frequencies. Thus the stations mentioned above have frequencies (in kilocycles) of 1333, 940, 809, and 610 respectively. In America and in Europe the difference for stations in the one city is only 50 kilocycles. Such a narrow band of "no man's land" of the ether would be unsuitable for Australian stations. The receivers in use, or the receivers and their aerials, would not be able to selectively pick out one station to the exclusion of the others, and that is what the listener wants.

Crystal sets of the average type in use now would be of very little use, and many valve sets near one of the more powerful stations would be of very little use.

It is apparent, therefore, that the Postmaster-General will need to be careful before authorising many more stations, and that a very thorough redistribution of the wavelengths will be necessary if even a few of the applicants receive licenses in Melbourne and Sydney.

It should, however, result in more extensive investigation into its performance, with the assurance of its complete acceptance in the near future.

By-Pass Condenser Necessary.

DUE to the fact that the shield-grid of the new 222 type valve is connected directly to the 45-volt tap of the "B" battery, it has commonly been assumed that it played a negligible part in causing instability and other troubles which arise from the use of a common "B" battery. Actually this shield-grid has a mu or amplification constant with respect to the plate of between forty and fifty. This means that any variation in its voltage produces a change in the plate current forty or fifty times as great as the same change in plate voltage would produce. For this reason it is important to see that any common impedance through the "B" battery is eliminated. This should be done by connecting a by-pass condenser from the shield-plate terminal of the socket to the negative filament terminal. The fact that the circuit is not unstable does not indicate that coupling is not taking place, since any disturbance in the "B" circuit of one particular valve will cause a variation in the shield of that valve which will produce "negative" regeneration or tend to reduce the amplification.

Every Third Home

VICTORIA'S PROUD POSITION

LICENSES TOTAL 136,481

A MELBOURNE radio writer says:—

The upward trend of the curve of listeners' licenses in Victoria, Australia, has had a check. The continued increase of licenses which has marked out Victoria so strikingly since 3LO Melbourne commenced its service in 1924 was so far in excess of figures in other States that it was not surprising that some sign of stabilisation should eventually come into evidence.

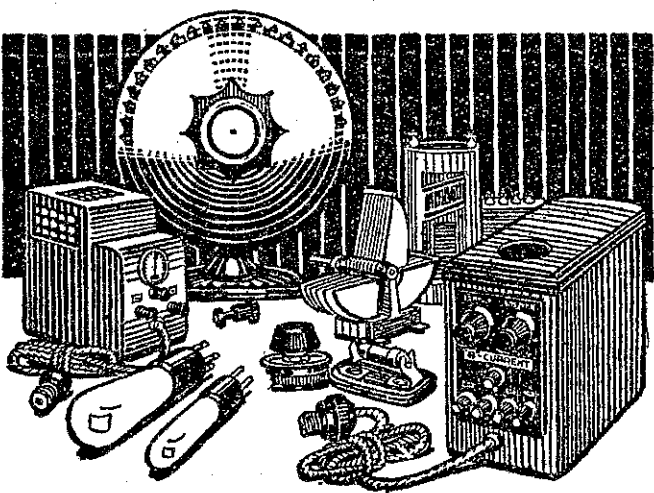
"Some critics, apparently but meagrely informed of the history of broadcasting in Australia, seem to see, in a temporary decline of the advancing license totals, a slackening of listeners' interest in the services. They even go so far as to say that the license figures are tantamount to an expression of dissatisfaction by listeners."

"Such criticism," says the Melbourne writer, "is far from being an explanation of the fact that license figures were two hundred less in May than in April. If the total were only a small number then the 200 might be worth regarding seriously, but when we remember that the grand total for Victoria is 136,481 and for the rest of the Commonwealth 263,340, there is not much ground for feeling pessimistic."

"THE number of licenses cannot go on increasing indefinitely. There must come a time when all the prospective listeners have their licenses. One cannot expect that every single household will have a wireless set, at all events, for some time to come, but when every second or third house has one we must in reason say that the maximum is being reached. And that is what has occurred in Victoria. The official figures given out some time ago showed that there was a license held by every third household."

"One must conclude, therefore, that the phenomenal totals for licenses in Victoria, in comparison with totals in other States of the Commonwealth and in other countries, must sooner or later show a decline. One fact alone should convince readers of this conclusion, the official figures always show the net totals after deductions have been made for the people who have not completed their payments or have given up listening-in. There are often good reasons for abstaining from listening, such as when a listener leaves the State or suffers some setback financially. It was mentioned at the Royal Commission last year by witnesses that a large number of listeners drop out in this way and the absence of their licenses from the total does not in any reflect any criticism of or dissatisfaction with the services. It was simply unavoidable."

"The figures for May show an unusually large number of such deductions and consequently the net total is about two hundred less than in April. But there were actually 3018 new listeners licensed during May. That is definite proof that the services are still attracting new patrons."



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Radio 3

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THE BIG FIGHT

ALL EYES ON JULY 27

ACTUAL TIME UNCERTAIN.

INTENSE interest is developing among listeners in connection with the big fight between Gene Tunney and Tom Heeney, on July 26 (July 27 our time), for the world's championship, and arrangements are being made in many quarters for parties to listen in direct on short wave accounts, or by means of relay, should that be possible, through the New Zealand stations.

According to letter advice received, it is expected that listeners will have at least three short wave sources to choose from, namely:—

2XAF	Wavelength	31.4 metres.
2XAD	"	22 "
KDKA	"	26 "

The actual time of the big fight will depend upon the time when the preliminary bouts finish, but a reliable forecast on this point will be available by cable from New York, for our next issue.

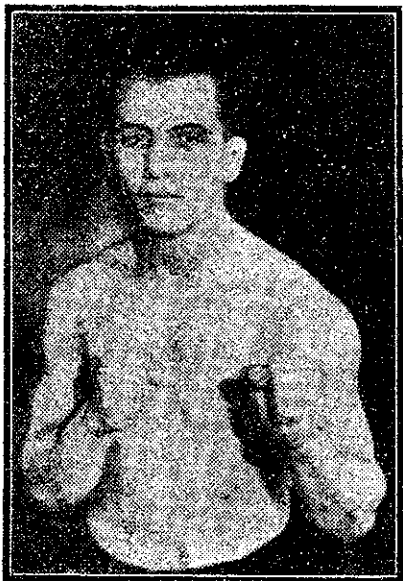
DR. KAROLUS, of Dresden, one of the prolific workers in television, has developed a method of transmitting photographs and papers in colour over telegraph lines. Any colours except green, blue, and mauve may be sent by his system. The pictures or papers handled cannot exceed 4 inches by 7½ inches.

Auckland Notes

(By Listener.)

MANY Aucklanders were completely bewildered over the peculiarities of reception last Sunday, and there were many quite unnecessary investigations of sets and testings of batteries. Wellington, which usually roars in, could be detected spasmodically, while the Australian stations were absolutely dead. It was only next morning, when the news of the effect of the aurora was made public in the Press, that listeners realised how much fruitless investigation they had undertaken. The few who had observed the display in the southern sky were aware of the cause of poor reception. Fortunately such conditions are unique.

GENERAL interest has been aroused over the forthcoming presentation of a four-act comedy at 1YA on Wednesday next. It is the first time that such an ambitious attempt has been made in New Zealand, and judging by the popularity of the short radio plays the experiment should prove most acceptable. Listeners do not realise that there is a great amount of work before such a presentation goes before the microphone, for, though the performers are not under the necessity of memorising their lines, there is much special technique to be mastered, and the incidents that convey various effects must be carefully rehearsed.



Norman Radford,

Australian Boxer, to fight in Dunedin. Artlite, Photo.

WHAT an asset to a station our Municipal Band is. Nothing finer can be heard on any receiving set operating in these parts. Last Wednesday they brought back memories of tense war days in their popular rendition of Godfrey's "Reminiscences of the Nations." The same night brought a vocal "find" over the air. Miss Sarah Stappole was the soloist at the municipal concert, and her solos must have brought as spontaneous outbursts of applause in many a home as they brought in the Town Hall. If her services can be secured at the studio there will be few sets idle that night.

TWO other newcomers to the 1YA microphone were much appreciated last week. They were Mrs. Fred. Basham and Mr. A. Briggs. Yet a few dissatisfied ones keep on harping about monotony!

THE Irish concert on the preceding evening was an outstanding success, and an easy first for items rendered, must be accorded to the station trio. Their playing of old Irish airs was one of the most appreciated selections which the trio have put over, and it was made the medium of many congratulations.

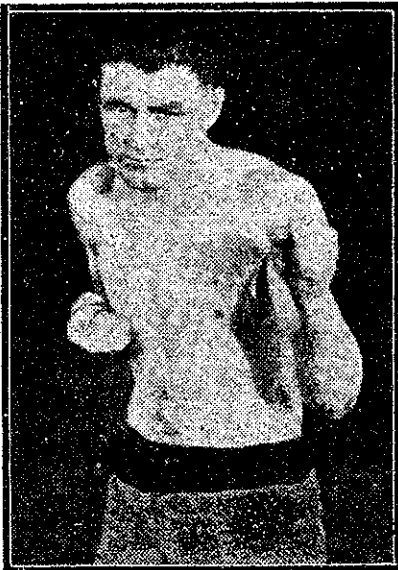
IT is quite safe to predict that on the afternoon of the 27th there will be little interest in the daily routine on the part of all who possess receiving sets, and there may be unaccountable and pardonable absences from toil. Given favourable conditions for reception, a rebroadcast of the ringside description of the fight is certain. What a rush there will be to the shops of dealers, and to homes adjacent to places of business. One enthusiastic employer has informed his staff that if the relay is feasible they may all come out to his house and listen in. This is the spirit which popularises radio. A successful rebroadcast will create quite a radio boom, and should the fates be unkind, well, the Broadcasting Company cannot be blamed. We know that they are making every effort to astonish New Zealand, and one and all trust that they will do so.

"WHAT kind of a set do I need to hear the account of the trans-Tasman flight?" This was the question put to the writer by a man who knows nothing of listening-in, but who has suddenly come to realise all that he is missing in consequence. When it was explained that nothing more than a cheap crystal outfit would be necessary, and that other expenses would be only the aerial equipment and the license fee, off he went at once to a dealer. How many others there are who should do the same! It is worth something to have the satisfaction of listening to what will be recounted of a historic achievement.

BOXING AT 2YA

A SHORT NOTICE FIXTURE.

AT somewhat short notice, 2YA last week was able to broadcast the finals of the Wellington Amateur Boxing Association, on relay from the Town Hall, where the events were fought before a big audience. The relay resulted largely from the courtesy and effort of Mr. G. P. Aldridge, secretary of the N.Z. Boxing Association, and Mr. Aldridge laid listeners under further obligation by acting as announcer. There has in the past been a definite demand for broadcasts of this nature from enthusiasts throughout the country, and the only room for regret in



Tommy Barber,

who fights Griffiths on July 28. Described by 4YA.

Artlite, Photo.

connection with the event is that rather more notice could not have been given, so that listeners at a distance could have listened in more extensively than probably was the case. The fights were of an interesting nature, and were capably described.

Some letters of appreciation have reached us, of which we are glad to make acknowledgment. The thanks of enthusiasts are due to the Boxing Association for their courtesy in permitting relays to take place. Unquestionably this publicity will react to the benefit of the manly sport.

One or two letters of complaint have also reached us, mainly expressing the hope that the concert items which were displaced will be heard later. That will be arranged.

TRANS-TASMAN FLIGHT

EXPECTED SOON

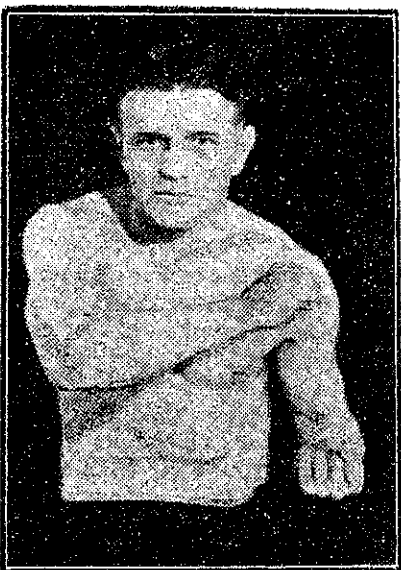
OUTSTANDING RADIO EVENT.

Latest information in connection with the flight of the Southern Cross by Captain Kingsford Smith to New Zealand is that it may take place between August 1 and 4 when the full moon will be available, or, as an off-chance, may be put back to the neighbourhood of August 31, when the moon will again be available.

The same thorough care that characterised the trans-Pacific flight is being displayed, and listeners will appreciate the need for this.

So far, no request has been made to the Meteorological Office for the supply of special information in connection with weather conditions. This will certainly be made before the flight is actually undertaken—at least, it was done even from New Zealand in connection with the flight from United States to Australia.

The flight, it is believed, will be from Sydney to Christchurch. The Postmaster-General, the Hon. W. Nosworthy, has advised that on receipt of official advice, request will be made to settlers along the West Coast of New Zealand to keep a look-out for the aeroplane, so that should any mishap occur to the radio apparatus of the aeroplane itself, early news of its arrival in New Zealand quarters may be available through the Postal Department.



Archie Hughes,
also to appear in Dunedin.
Artlite, Photo.

Landing is to be made at Christchurch, and from the broadcasting point of view, one of the four stations will be placed on the air to act as a

TALKS ON BIRDS

POPULAR FEATURE FROM 2YA.

ONE of the most popular talks put over the air from 2YA is unquestionably that given at regular intervals by Mr. Johannes C. Andersen on behalf of the Native Birds Protection Society. This talk is eagerly awaited by a number of nature lovers, and we have had several letters from country readers advising that the whole family, including the children, makes a point of waiting up for Mr. Andersen's talk on New Zealand birds. In these talks Mr. Andersen has displayed a wonderfully comprehensive knowledge of his subject, and an intimate acquaintance with the habits of our feathered friends. His talk on the "Tui" on Thursday evening last was particularly interesting, and it showed the immense pains that Mr. Andersen has been at over a number of years to gather his knowledge. It was a surprise to many to learn that Mr. Andersen had noted not less than nearly two hundred different songs of the tui. In the course of his talk, Mr. Andersen imitated some of these notes and was particularly interesting when he recounted the story of the duet between a bellbird and a tui. Next week's talk will be upon the bellbird.

A QUEER STUNT

REQUEST ITEMS FOR OVERSEAS.

RADIO listeners are familiar with the request number—items sung or played by broadcasting artists at the special request of listeners who telephone the station. The latest development in this direction has been initiated by the Sydney broadcast station 2BL, which broadcasts request numbers for the edification of American listeners. Station 2BL does not wait for residents of the United States to write letters or cable, but arrangements were made with the Californian shortwave station 6EA to send by radio to 2BL the names of request items which American listeners may wish to hear. As the speed of radio is practically instantaneous, the messages from 6EA are picked up by the 2BL engineer (Mr. Ray Allsop), and the items are broadcast from 2BL immediately.

radio beacon for the Southern Cross, and the others will also be on the air for the convenience of listeners, in order to give them descriptions of the morse messages that will be transmitted from the aeroplane itself, and any other news available concerning the flight.

On arrival at Christchurch, a running description of the event and scenes associated with the arrival will be broadcast by 2YA and rebroadcast by other stations.

CROSLEY

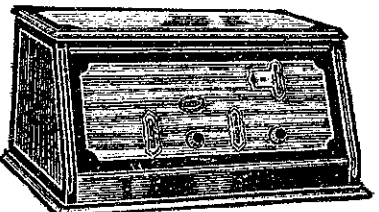
The Distance Getter!

The 6-Valve Crosley 6-60 Model is unrivalled for reception from distant stations. Many users report having regularly logged America and Japan with perfect volume and clarity.

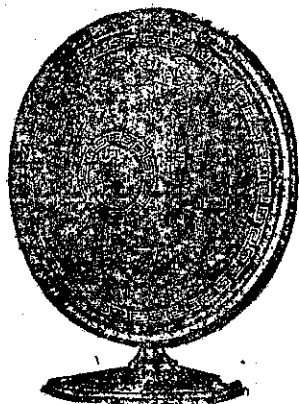
The metal-shielded chassis of the 6-60 Crosley with its superlatively designed circuits and unique drum control will suit your most exacting requirements.

If you have not already heard it, arrange for a demonstration with your nearest agent.

Prices from £34



The NEW
CROSLEY
MUSICONE



You are not giving justice to your set unless you have a Crosley Musicone—the perfect loudspeaker. Two models—

Ultra Musicone £3-10s.
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CROSLEY RADIO

"You're there with a Crosley"

There's an authorised "Crosley" Dealer in your district. If you do not know him, write for his name to North Island Distributors:

ABEL SMEETON LTD.
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It is quite safe to say that there are more Browning-Drake Kit-sets in existence than any other Kit-set in the World. Its great popularity has been won through its wonderful "distance-getting" ability. The Browning-Drake circuit and parts are now recognised as the most popular among Radio fans.

A Browning-Drake Radio Set can be easily constructed by any amateur from the Kit-sets now offering. By building it yourself your Browning-Drake will cost you only a few pounds.

This set, because of its extreme selectivity, is very suitable for New Zealand conditions.

The Complete Official Browning-Drake 5-Valve Kit Set

Complete to the last screw and including the Official Coils, Foundation Union and all necessary parts of the very highest quality at the ENORMOUSLY
REDUCED PRICE of **£12-0-0**

Full Particulars from N.Z. Master Agents:

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THE NEW ZEALAND Radio Record

PUBLISHED WEEKLY.

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

SUBSCRIPTION RATES.

Rate of Subscription: Single copies, 8d.; Annual Subscription (if booked), 12/6, post free; normal rate, cash in advance, 10/6, post free.

ADVERTISING RATES.

Schedule of Advertising Rates available from all advertising agents in New Zealand, or write: "Advertising Manager," Box 1032, Wellington.

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

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

A. J. HEIGHWAY,
Managing Editor,
"The N.Z. Radio Record,"

P.O. Box 1032.
Dominion Buildings, Mercer Street, Wellington.

WELLINGTON, FRIDAY, JULY 20, 1928.

RACE BROADCASTS BANNED

THE Trotting and Racing Conferences have together decided to ban their meetings from public broadcast on the grounds advanced that thereby illegal betting is encouraged, and the business community distracted by the time taken in listening. Unquestionably the racing authorities are entitled to manage their own business in their own way. And the public, although it might not like the decision, would have no valid ground for objecting if the conferences said that in their judgment the broadcasting of race meetings kept people away and diverted money from the "tote" to other channels, and by doing these things was affecting their financial strength and the security of their investments. But the conferences have not advanced those reasons—in fact, we do not believe they apply—and have based their decision upon grounds which are debatable and fitly the subject of public comment.

THE party most concerned is the public. How will the public appreciate the action of the Racing Conference and the Trotting Conference? It is the public that supports these sports, and it is entitled to express its view concerning the news service it would like in relation to them. The allegation is that broadcasting promotes illegal betting; that hotels, clubs, billiard saloons have sets installed, and the receipt of the news promotes the activity of the bookmaker. What are the police doing—if these statements are correct? But are they? All race meetings are not broadcast. The bookmaker does business on all (presumably), and has made it his business, as a matter of common knowledge, to acquire his information by other means in respect of all meetings. He did this before the advent of broadcasting, and the system still obtains. Banning broadcasting will not ban the bookmaker. It will simply limit the pleasure and curb the enjoyment of a large body of inoffensive listeners because of a questionable claim that a public utility is the subject of abuse. Every modern convenience and utility is the subject of injury as well as good. The motor-car dispenses death as well as health; chemistry saves life as well as takes it; all utilities are subject to wise administration and the assessment of merit by balance. Where does the balance lie here? Our view is that the wheel of progress cannot be stopped. That the public, if it is entitled to the recreation of racing in an exacting world, is entitled to the additional service of pleasurable and rapid descriptions thereof. The reasons advanced by the conferences for their decision are not in our opinion valid in themselves, and are but a cloak for other reasons. The decision rests with the public, and we believe the public will not be slow in expressing disapproval and disappointment at the failure of these responsible conferences to balance out the merits of the case, and allow the good of the greatest number to have sway.

Hellesen Radio Batteries

THE BEST IN THE WORLD

DOES THIS NAME MEAN ANYTHING TO YOU?

HELLESEN STANDS FOR BETTER RESULTS, LONGER
LIFE, AND GREATER EFFICIENCY IN YOUR SET.

Large Stocks Carried by

SOLE N.Z. AGENTS.

John Chambers & Son, Ltd.

AUCKLAND, WELLINGTON, CHRISTCHURCH, DUNEDIN, AND
INVERCARGILL.

Crystal Control

EFFECTIVE AT 2YA.

FIRST IN AUSTRALASIA.

STATION 2YA is now equipped with Piezo Crystal control, and is believed to be the first station in Australasia to be so equipped. Mr. J. M. Bingham, the company's engineer has been in Wellington for several days past working on this equipment. The work is now completed, and the station is now transmitting on the new system. This is a marked advance and demonstration of the desire of the company to keep the station equipment in the forefront of technical efficiency.

With the conventional valve oscillator there was reason to suspect that the frequency of the wave would be liable to be varied by the impressed speech and music as well as the amplitude of the wave. For best operation the wave length should not vary—only the power of the station be varied by the speech or music. If a station suffers from frequency as well as amplitude, modulation, it is bound to suffer from a certain amount of lack of clarity. Under crystal control the possibility of frequency variation is reduced to an absolute minimum, and the wave put out has only the amplitude variation which is the objective desired.

The frequency of 2YA, it may be stated, is 713.9 kilocycles.

As showing how up-to-date 2YA is now in comparison with other stations, we append a brief reference to crystal control from an American authority which is just to hand by the American mail.

SPECIAL piezo oscillators, which will hold a station so close to its frequency that several such stations can operate on the same wave length without interference, is a possibility of the very near future, according to Dr. J. H. Dellinger, of the radio laboratory of the United States Government Bureau of Standards.

"Radio frequency standardisation, of hitherto laboratory character only, has been of first importance in reducing radio interference," says Mr. Dellinger. "The recent International Radio Conference recognised frequency as the corner-stone in the radio structure by devoting its major attention to a frequency allocation to provide for the orderly development of all radio services."

"Because of the increasing use of all available radio channels, particularly those for broadcasting, and the very high frequencies, the requirements of frequency measurements are a hundred times more rigorous than they were five years ago. The perfection of standards and measurements to the necessary accuracy requires the most intensive work by the Government and by various large organisations to produce standards and instruments that can be used to keep radio stations each operating on its own channel. This development has been facilitated by a special co-operative plan organised by the Bureau of Standards a year ago involving the Commerce, War and Navy Departments and several large American electric and radio companies."

"Piezo oscillators are now available to hold radio station frequencies extremely constant. For instruments of this type equipped with temperature control, national and international comparisons have shown that they are reliable to a few parts in 100,000."

"This brings in sight the possibility of the use of special piezo oscillators in broadcasting stations which will hold the frequency so close that several such stations can operate simultaneously without heterodyne interference on the same frequency."

SPORTING

NEXT WEEK'S FIXTURES

Wednesday, July 25: Otago v. Wairarapa, 4YA.
Saturday, July 28: Rugby—1YA, 2YA, 3YA and 4YA.
Boxing—Griffiths v. Barber, 4YA (Mr. Divers, Announcer).

"MYSTERY NIGHT" FOR 1YA

DATE FIXED FOR AUGUST 29

PRIZES FOR READERS.

IN accordance with the recommendations of the 1YA Musical and Dramatic Committee, a "Mystery Night" programme is to be broadcast on Wednesday, August 29. On September 26 there will be another "Mystery Night" programme.

On the first occasion the names of the artists will not be announced, but listeners will be asked to fill in coupons which will be published in the "Radio Record." The "Radio Record" will offer a prize to the reader returning the most correct coupon most speedily, and the exact terms will be published later.

On the second occasion the names of the items which are being given will not be announced, and here again a prize will be offered for competition amongst those possessing the necessary skills to detect the items.

The New "Radio Record"

Souvenir Number on August 3

WE had hoped that the change in our size and shape could have been effected with the commencement of our second year, and began planning to this end some months back. The paper required has to come from Canada, and shipment from the mills is not always immediately available. We believe supplies will be in hand by a steamer due this week at Auckland, and the change will be made just as quick as delivery is secured.

We make this explanation in response to several letters from listeners who were desirous of getting the first volume of the "Radio Record" bound. The 52nd issue bore date July 13, but our suggestion to listeners concerned would be that they should withhold binding till the change is actually made. We hope the new size will appear on July 27, but if not then certainly on August 3. We sincerely regret this delay, which we endeavoured to avoid by moving in the matter of new paper five months ago, but the delays have been beyond our control.

The issue of August 3 will be of a specially comprehensive and valuable character, running probably to 48 pages or more. It will be a souvenir number, commemorating the opening of 2YA, and the completion of its first year of service to listeners. Opportunity will be taken to give a particularly comprehensive review of developments in connection with broadcasting. We can assure readers in advance that this will be a specially interesting number.

What Tones can your Set Reproduce?

Continued from cover.

the fact that it contains practically no harmonics, particularly when softly blown. The flute is thus seen to be an instrument of the purest possible quality.

The test transmission will range from frequencies of 32 to 30,000. That limit is, of course, beyond the capacity of any set and of many human ears. Sets should be capable of receiving at least up to 10,000. If, on the other hand, sets are capable of receiving only up to 5,000, instruments and voices become more or less colourless and similar in quality, and one instrument can hardly be told from another.

To help listeners to make a complete record of the result of the test, so far as their own set is concerned, the "Radio Record" publishes a schedule on which are marked the various frequencies which are to be broadcast, and listeners are invited to mark opposite each one the manner in which it is received.

The Broadcasting Company invites listeners to send in these coupons so that an analysis of the results of the test can be made.

TABLE OF HARMONICS

The following table of harmonics is referred to on page 1.

	Piano	Clarinet	Flute	Cornet
10 th				E, 2560
9 th				D, 2294
8 th				C, 2048
7 th	B \flat -B \natural , 1890	B \flat -B \natural , 1890	B \flat -B \natural , 1890	B \flat -B \natural , 1890
6 th	G, 1620	A, 1620	A, 1620	G, 1620
5 th	E, 1350	E, 1350	E, 1350	E, 1350
4 th	C, 1080	A, 1080	A, 1080	C, 1080
3 rd	G, 810	G, 810	G, 810	G, 810
2 nd	C, 540	A, 540	A, 540	C, 540
1 st	C, 270	C, 270	C, 270	C, 270

B \flat -B \natural equals B flat and B natural.

"CAPPING" BROADCAST

4YA USES PORTABLE TRANSMITTER

A BROADCAST of the students' capping celebrations in Dunedin on Tuesday, July 10, was well carried out by 4YA, and proved thoroughly enjoyable. The whole carnival was well "covered," and listeners in who have never seen how Dunedin students honour the important occasion were able to form a good appreciation of all that was going on.

The street scenes were described by the announcer, who visited various parts of the city in a motor-car equipped with Mr. J. D. McEwen's short-wave transmitting set. This transmission was picked up on Mr. F. Barnett's short-wave receiver at the Kalkorai Band Room, relayed to 4YA and then broadcast. The transmitter in the motor-car was operated on a wavelength of 80 metres, so that, owing to

the harmonics, it could not be received at the station.

The crowd which surrounded the motor-car made transmission difficult, but compensation lay in the fact that the street noises added colour and atmosphere to the broadcast. Whenever the crowd was silent the broadcast and re-broadcast were exceptionally clear. At one place where the car stopped there was some electrical interference which prevented any transmission.

As well as the street performances, the doings in the Octagon Theatre were described, the two broadcasts alternating. Big Brother Bill was in charge of the microphone and he gave a breezy account of all that was happening, while the students' speeches, picked up from the public address loud-speakers, were relayed and broadcast.

IF reversing the condenser leads does not stop hand-capacity effects it will often be found that one of the grid leads is placed too near to the panel face.

DON'T YOU THINK YOUR RADIO SET COULD BE IMPROVED?

IF Philips "Miniwatts" are NOT in every socket of your receiver, then certainly there is ample room for improvement.

It is only when you take a full set of these mighty valves home, and place them in your receiver, that you realise that they are DIFFERENT.

See that you are using the CORRECT TYPES by either writing to us, or asking a GOOD dealer.

Whatever you do, see that you get a copy of our attractive and informative value folder.



Advt. of Philips Lamps
(N.Z.) Ltd. (Radio Dept.),
Hope Gibbons Building,
Courtenay Place, Wellington

PHILIPS

"MINIWATTS"

Racing Broadcasts Banned by Authorities

Is the Public Being Given Proper Consideration?

THE New Zealand Trotting Conference and the New Zealand Racing Conference have banned the broadcasting of trotting and race meetings on the grounds of detriment to the interests of the clubs and the public in facilitating illegal betting and exciting an interest on the day prejudicial to the business community. These grounds are of questionable merit and warrant public discussion. The general public is entitled to express its views on this embargo which does not seem to denote adequate regard on the part of those responsible for the appreciation of these broadcasts by thousands of listeners unable to attend sports meetings. The broadcasts have undoubtedly widened interest in the sport and it remains to be seen just how the public will take this complete embargo by the authorities.

THE Trotting Conference was the first to move in the matter, but its lead was followed two days later by the Racing Conference carrying an identical resolution.

The matter was brought forward by a report from the chief racecourse inspector, Mr. A. Ward, who wrote as follows:

The following questions appear to have arisen:

(1) Whether the company should pay for the right to use race or trotting courses on race days for the purpose of supplying entertainment or news to persons who were exclusively the company's customers.

(2) Whether, in view of public interest in racing, the clubs should continue as at present to assist the company without fee, or

(3) Whether the broadcasting of racing news from courses should be allowed under any conditions.

No doubt there were many people who were unable to attend race meetings, but who eagerly awaited early news of the results of the more important races, such as derbies, cups, or steeplechases. There were also convalescents in hospitals and other institutions who probably derived pleasure from descriptions of racing events over the wireless. From one point of view no valid reasons could be advanced against a proposition to charge the company a fee for a commodity supplied.

"There is, however, the most important aspect of this subject to be considered, and that is whether it is a wise policy to permit either free or for payment the broadcasting by wireless of racing news from race or trotting courses. Racing and betting on horse racing is regulated and governed by a very drastic statute law, the basic principle of which is to confine betting on horse racing events to the particular course where and when racing is taking place, and only by those who are able to be on the course in person, and then only through the medium of the totalisator.

"This means that if a person cannot attend a race meeting in person he cannot bet on any racing event unless he commits an offence. The obvious intention of the statute is to stifle interest in horse racing and betting thereon on race days away from the course. This being the case, would it be prudent policy for racing clubs to permit an outside body, which has no responsibility under the Gaming Act, for private profit to pursue a course which can have no other effect than to stimulate interest which results in illegal betting?"

"It cannot be doubted that the broadcasting as at present carried out does stimulate interest away from racecourses on race days, and is resulting in an increase of business for bookmakers. This is common knowledge. Receiving sets are to be found in clubs, hotels, and other places where news from courses is received by wireless, and bookmakers are taking full advantage of the fact. If racing clubs are accused of providing a stimulus to bookmakers, and their clients to indulge in illegal betting, it would be awkward to refute. It would be no answer to say that the Government provides bookmakers with telephones, which undoubtedly facilitate their illegal calling, as racing authorities cannot reasonably condemn the administration of the Gaming Act while condoning something of equal effect.

"I suggest that a sound argument against the allowing of broadcasting is that it tends to create interest which leads to betting in places and under circumstances which are forbidden by law. I am advised by the Commissioner of Police that he has had representations made to him on this very subject by his officers. He is averse to the broadcasting of news from courses, as it tends to increase his difficulties in suppressing illegal betting.

"If this company is so desirous of entertaining its clients with racing news, a representative could attend the various race meetings, where no doubt he would be hospitably received by the officials, and with the turf reporters he could record his impressions on each racing event and his impressions could be broadcast during the evening after the meeting. This would have a double effect. It would not place racing clubs in a false position, and a much larger number of clients would be at leisure to receive the news, and they would not be diverted from their interest and attention in their various occupations, and there could be no illegal betting, as the racing would be over and finished."

In an addendum to the report Sir George Clifford said: "I thoroughly approve of this report, and recommend that it be adopted by the combined committee of the New Zealand Racing and Trotting Conferences."

A Complete Embargo.

Following this, the chairman of the Conference, Mr. W. E. Eidevall, said he was strongly in favour of broadcasting, which provided great enjoyment to people in the country, but in the face of the report just read he did not see what they could do. He accordingly moved the following resolution:

"That the question of radio broadcasting of race meetings during the progress of the racing having been carefully investigated the New Zealand Racing Conference resolves:—

"1. That it is not in the interests of the racing club or of the general public that such broadcasting should be permitted for the reasons that such broadcasting (1) promotes and facilitates illegal betting; (2) creates and maintains an attention to the happenings at race meetings during the progress thereof by many persons not present, which results in disadvantage to the business community.

results. Where there is a public demand that demand will be met, and the posting of the results is like the broadcasting of the races, simply a service to the public. The Chief Inspector says the result is an increase in illegal bookmaking, and that this is a matter of "common knowledge." We think his presentation of the case is exaggerated. Bookmakers were in existence long before broadcasting began, and although conducting an illegal business, have had sufficient ingenuity to secure the information necessary to their craft, through their own means of communication, over the Government telegraphic and telephone services. Are those services to be discarded from the use of the community because of their use in this way? These bookmakers presumably operate in respect of all race meetings throughout the country. Only a small proportion of those meetings have been broadcast so that it has been impossible for the bookmakers to rely upon broadcasting for the information they require. They had their own service before broadcasting began and they

as being a gain to the public and a populariser of the sport.

Public Interest Must Rule.

It is the public that is chiefly concerned in this matter. If it be conceded that racing and trotting are permissible recreations—and we do not think that matter is in question—then their popularity rests with the public; their continuance depends upon public support. In return for that support the public is entitled to the best possible service in news and information, and on this plane there is no rival for the descriptive broadcast in its immediacy and interest. If it be urged that abuse attends the broadcast, that is no argument for its complete abolition. It is only an argument for proper policing and control. It is the function of the police to prevent abuse of the law. To cut off a public utility because of some small individual abuse is ridiculous. What community would endure its gas supply being cut off because some poor distressed soul inserted a gas tube in his mouth? Should

looking for and against that, anyway must be put the pleasure of invalids, the aged and the distant. I trust the Conferences will show they are sports and amend this rather ridiculous ban. Australians will laugh at us as a crowd of wowers—and they won't be far wrong.—"Good Sport," Levin.

What About the Backblockers?

DO the Racing and Trotting Conferences realise what they are doing by their ban on broadcasting? Have they given any consideration at all to the pleasure that the broadcasting gives the listeners in the backblocks who are quite unable to attend the meetings in the bigger centres which are chiefly affected by the ban? Their action will be most unpopular. If it is an effort to squeeze a few shekels out of the listener, it is, I think, doomed to failure. Obviously, on merit, the boot should be on the other foot. The racing and trotting meetings get their revenue from listeners when they attend the meetings, which they do in big numbers when the meetings are held locally. It is the distant listener that is affected. No one interested in the sport will stay away from a meeting when he can attend. The sport is too good for that. But when he cannot attend, he should be given the second-hand thrill of a good broadcast. There is no doubt about that and I am sure the ban will be condemned on all sides. The argument about illegal betting is, to my mind, ridiculous. The bookmaker does not rely on broadcasting. He is too clever for that. I hope the public will speedily let the Conferences know their wishes in this matter.—"F.N.," Palmerston North.

Statement on the Racing "Ban" by Mr Harris

"THE Broadcasting Company has always made it quite clear in its public statements and correspondence that if the racing and trotting clubs did not consider it in their own interests to have their meetings broadcast, they had only to so advise the company and their wishes would be respected," said Mr. A. R. Harris, general manager, in referring to the decision of the Racing Conference. He added that the Broadcasting Company did not presume to tell other people how to run their business.

"When, however, the Trotting and Racing Conferences based their refusal to permit further broadcasting on such reasons as those set out in the resolutions, then the logic of their decision is certainly open to question," he said. "We do not admit that broadcasting facilitates illegal betting. If the Conference has evidence of the prevalence of illegal betting, then obviously that evidence should have been placed in the hands of the proper authorities. If on the other hand they have no substantial evidence, why should the law-abiding listeners be penalised? So far as the promotion of legitimate sport is concerned, the present method of descriptive broadcasting of the actual racing does more good for the sport than the alternative evening broadcast of an ordinary report as suggested by the Conference could possibly achieve. The Broadcasting Company is quite as desirous as is the Racing Conference that the laws of the land should be defended; its best interests lie in promoting the moral and material welfare of the people whom it serves; but I cannot see the logic

of that part of the resolution which alleges it to be disadvantageous to the business community that the attention of those not attending race meetings should be attracted by broadcasting, while implying that no disadvantage to the business community is incurred by those who actually attend the meetings."

In a further statement to the "Radio Record," Mr. Harris stated that the Conference suggested that the Company should be afforded facilities to obtain reports of every racing or trotting meeting throughout the Dominion, such reports to be broadcast from the Company's stations after the conclusion of the day's racing.

This, as he had said, would be but a poor substitute for the descriptive broadcast, but further than that it seemed to him that the evils about which the Conference would appear to be concerned would be intensified rather than lessened were the alternative to be adopted and applied to anything like the extent suggested. As a matter of fact the Company had no intention to broadcast reports of every meeting, and he was quite sure that listeners had no desire that this should be done. All that the Company had done in the past, and all that it desired to do was to broadcast one or two meetings a year from each of the four main centres, and which meetings were usually held on public holidays.

This, he believed, was far less likely to disturb industrial life and encourage illegal betting than was the alternative suggested by the Conference.

razors be abolished because someone cut his throat therewith?

In this matter the greatest good for the greatest number must be the final determining factor. A balance must be struck. It rests with the public to throw in the weight of its opinion as to its own interest to tip down the beam against the restricted individual view that so far seems to have prevailed. We firmly believe that on reconsideration the conference will realise that they have far more to gain from the broadcasting of their meetings than to lose, and that they will realise the public, as their patrons, have their rights in the matter.

LETTERS OF PROTEST

Be Sports!

I cannot say how disappointed I am at the news that broadcasting of races is to be banned. What are the authorities thinking about? Don't they want their sports to be popular? Don't they want thousands of people who otherwise would think nothing of racing to be interested in the thrilling broadcasts and make up their minds to go when they have a convenient opportunity? Broadcasting is the greatest feeder of interest in the sport that we have had. It gives a wide knowledge and interests thousands otherwise indifferent. The cure for the evils that are alleged, more efficient police work. I doubt very much if the allegations are soundly based. A policeman always sees what he is

still have the same system. Broadcasting is of no outstanding benefit to them in displacing their own methods.

The Gaming Amendment.

That a little extra opportunity for speculative investment is afforded distant enthusiasts by racing broadcasts may be possible—although it is not proven on the facts—and if it were feasible for investments to be telegraphed to the totalisator the race meeting concerned would secure a direct cash benefit from this increased interest. The Gaming Bill now on the stocks contains a proposal to that end. As things are at present (or have been) this business cannot benefit the clubs because in any case it is impossible for the money to be remitted. Banning the broadcast therefore will not benefit the clubs one iota: the effect will be merely that definite injury and disappointment will be inflicted upon thousands of unoffending souls. It is there we think that the conference failed to strike a balance between the professional zeal of their chief inspector and their own knowledge as good sports of the widespread interest in and benefit from racing broadcasts.

The Business Interest.

The further point that the business community suffers disadvantageously through the distracting charms of racing broadcasts has even less merit than the suggestion of illegal betting. Frankly, how many people in business are able to devote their day to listening to a racing broadcast; how many desirous of attending and able to do so would stay away merely because the meeting was to be put on the air? A handful at the most. And as against that handful there is the definite gain of interest in thousands of distant homes—an interest that later translates itself into patronage of the local race meeting and so builds up an expanding interest in the sport of racing. It is this interest that the Racing and Trotting Conferences should be concerned to maintain and develop. It is the occasion for a long view and not a short view—the occasion for a balanced view and not a biased view. In striking a balance we are satisfied that the weight of public opinion will be in favour of the continuance of racing broadcasts

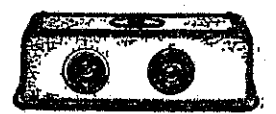
B.B.C.'S VIEW OF "RADIO RECORD"

WE were interested to receive by last mail acknowledgment from the British Broadcasting Corporation of the fact that they were receiving the "New Zealand Radio Record" regularly. A comment was added: "We find it is a very interesting and 'live' paper, particularly in its steady efforts to be a real link between the broadcaster and the listener."

TELEVISION radio signals, when made audible by the ordinary radio receiver, produce a high-pitched note intermittently interrupted as the subject transmitted moves about before the eye of the television transmitter.

ATWATER KENT RADIO

We can honestly recommend it. Its pure tone, ONE Dial operation and steadfast reliability are impossible to beat. Ask for a demonstration TO-DAY.



Model 35, six-tube, One Dial Receiver, Crystalline-finished cabinet.



Model 30, six-tube, One Dial Receiver, Solid mahogany cabinet.

C. & A. ODIN & CO., LTD., New Zealand Distributors, WELLINGTON.

Exide BATTERIES

MEAN DEPENDABILITY. Installed at 2YA Wellington.

All sizes. From 9/- each.

EXIDE SERVICE STATION

79 Kent Terrace, WELLINGTON.

From the Woman's Point of View.

By VERITY.

TO-DAY AND TO-MORROW

The Unhappy Heart.

LIFE, to those of us who live at all, is conflict and endeavour. "More like wrestling than dancing" it seems, in truth, to be, with full measure of trouble, sometimes a little joy if we are lucky.

And one thing is sure: There is far too much unhappiness that is preventable, ridiculous, pathetic, unnecessary. There are women miserable through broken illusions they should never have created; illusions of perfect friendship, ideal love, life without pain. There are women unhappy because they persist in quarrelling with friends who fail to conform to their standard. Some ignore crimes in acquaintances and refuse to condone trivial faults in their friends, who are no more perfect than they are themselves.

Supersensitive.

WE are too easily offended by those we love, especially if we are supersensitive. Longing for that tender, uncritical, understanding love which is so rare that it may almost be disregarded, the supersensitive woman is "disappointed" with life.

Young people must expect a few disappointments if they are critical and intelligent. Those who have reached the forties without achieving some philosophy of life will suffer terribly from "disillusionments." Without philosophy we cannot smile at ourselves, nor discern the secret of our dissatisfaction. What happens, asks the student of physics, what happens when an irresistible force meets an immovable object?

If self-love is immovable from the ego and the instinctive longing for power is unsatisfied, what happens? Conflict—pain from which we try to escape. What are the ways of escape?

*"Where gripping griefs the heart would wound,
And doleful dumps the mind oppress,
There Music, with her silver sound,
With speed is wont to send redress."*
—Richard Edwards.

Restless pursuit of pleasure, phantasy, or day dreaming, drugs, or drink?

These are all destructive and increase the soul's unhappiness, cause neurosis, even that dissociation of consciousness we call mental breakdown, insanity. The sensitive, tender-minded people suffer if they fall below their ideal, partly because they feel so intensely that loneliness of spirit which may lead to despair from lack of sympathy.

Value of Kindness.

THAT is why kindness is so valuable in the world. Women who seem happy are not necessarily so. We wear masks of cheerfulness or cynicism, and there are only one or two persons in a lifetime to whom we are simple and sincere. Is this self-protection or is it courage? Most women are much braver, more intelligent than they realise; but they fear to face themselves. They hide their loneliness behind self-assertion, talkativeness, indifference, laughter, that so often covers heartache.

Why not try to accept life differently, learn to adapt to work and friends, and relations, in a word, to environment? If we cannot do the work we long to, let us make the best of a job we must get through, even if it is entertaining hosts of acquaintances. If we cannot live with the people we love, let us try to like better the people we live with.

It is better to smile than to mope, to accept philosophically than to waste hours longing for the unattainable.

Waste of time is crime. We have not a thousand years to live. The present is all we have. "It is the present only of which man can be deprived."

If, for the moment we suffer, we can at least console ourselves with the realisation that pain may stir to life a new and finer idealism.—Dr. Elizabeth Sloane Chesser, in "The Psychology of Loneliness in Women."

Homely Perfumes.

DRIED sweet-smelling leaves—marjoram, thyme, geranium, verbena, lavender pips—make delightful "wash-balls." The leaves should be crumbled, mixed with fine oatmeal, and put into muslin bags. A bag dropped in your washing water perfumes it deliciously; oatmeal, too, is beneficial to one's skin. Fresh elder blossom in muslin bags in washing water also has a revivifying effect on reddened complexions.

If the roots of purple iris are washed, dried very slowly in the sun or a slow oven, the fragrant violet perfume, called orris root, can be obtained.

The Letters of Annabel Lee

MY dear Elisabeth:

As is usual in the gracious city of the south, in appreciation of art the Florence of New Zealand, Dunedin rose to the occasion in enthusiastic support of the Fuller-Gonzalez Opera Company.

Each night a fresh Italian opera was produced by this magnificent combination of artists; a wonderful test of ability and endurance, to which the performers, individually and collectively, rose like a bird. The rendering of "Il Ballo" in particular was superb, and considered as fine as a production at Covent Garden; the tenor and baritone especially achieving enchanting beauty of tone and interpretation. This opera of Verdi's, in his later manner, will be remembered, together with the great and tragic "Aida," as marking the climax of his career, though he lived afterwards to an advanced age.

IN relation to this epoch-making musical event, Izal, Scamuzzi, Polenti an Rota, the tenor, are names to conjure with. The season opened in Dunedin, with a house each night packed with the best and brightest of intelligentsia, the early doors often sold out before nine in the morning.

The efficient, melodious chorus is made up of talented girls picked from all parts of Australia, at least one of the charming galaxy being well-known to radio listeners in the sister continent, and a great favourite in concerts by wireless. Each girl is a trained vocalist, and several have been students at Sydney Conservatorium.

Only two of the principal women singers speak English, one being the delightful Danish soprano Margherita Flor, and the other the brilliant Henkina, who hails from Russia.

NOVELIST, playwright, and gifted student of the human comedy, Miss Clemence Dane is at her brilliant best in her latest novel, "The Babyns" is not amusing reading, with its earnestness of purpose and entire absence of superficiality; but it is an

WE will buy an old house
When we are richer;

One to arouse
The pen of an etcher.

Seeming—so mellow—
To have grown from the
ground,

Sown in a hollow
With birches around.

Under an oaken
Quiet of beams,
By the years unshaken,
We'll dream our dreams.

Nor would we bother
With seasons or clocks,
While our hearts shone together
In love's equinox.

Our Youth, poised finely
Thus, would believe
That age can be only
Midsummer eve.

—Cecil Day Lewis, in "The Spectator."

enthralled chronicle of an English county family through several generations, and an arresting analysis of the lives and vagaries, chiefly of an amatory character, of the members thereof. Four episodic stories make up the history of succeeding branches of the family, the first living out a brief drama in 1750, and the last in the present century; all linked together by hereditary attributes and the family strain, with its modicum of lurking insanity which occasionally crops up, leaving an aftermath of tragedy. Of these tragic-comedians the dear Menella is first and sweetest, with her short, idyllic love-story with ill-fated Jamie, truly a handsome Lothario, and made for love, but cursed from beyond these voices by the dark Harlot whom he jilted. Then there is the haughty Isabella of that house of memories, imperious and wayward, going forth into a world of shadows with her gypsy lover, her midsummer man; gentle, silent Anne, her descendant, who after storm and stress of emotion and endurance, finds peace in a son's devotion, as many another woman has done throughout the years. Lastly comes brave, gay Antonina, generous of heart, impetuous of speech, sometimes blundering in her puzzling union with the last of those Babyns, whom many women loved, but who made turbulent, perilous partners in the life of the intimate everyday, as is sometimes the way with those who charm both in and out of literature.

Each of these short tales ends on a note of tragedy. Subtly and skilfully constructed, with the vision and true touch of an artist, there is always the consciousness of the lovely English country, as background in these skilful stories of poor humanity striving to juggle with fate.

ANOTHER painter of the human form—worlds away in vision and treatment—is Mr. Harold Speed, who in this year's picture, "The Vale of Leutha," has presented mythological landscape, with conventionalised blue waterfall tumbling waters over weird rocks and vegetation; while in the foreground, amid the pomegranates

Books to Read.

THOSE who love the "year at the spring," and the spring-time of life with its enchantment and fragility, its mysterious awakening and blind obedience to instinct, its inevitable urge towards the untried and unknown, its beautiful promise and its great, wide hope, will delight in Gerald Bullett's volume of short stories, "The World in Bud." Mr. Bullett is at his best when handling the idyllic romance of opening life.

"Thistledown and Thunder," by Hector Bolithé, is a tale of his own travels and adventures most attractively told. Born in New Zealand, Mr. Bolithé experienced the familiar "difficulties of a colonial boy struggling towards taste and discrimination and knowledge, without any of the contacts which make these things easy in England and France." But there came a great day when he was able to embark on a steamer for England and discover the "Old World." His attitude of mind is somewhat refreshing. His great longing for personal "contacts" with noted artistic and literary people, his eager curiosity and keen delight and great zest for life savour of the colonial schoolboy. In South Africa he edited a weekly paper, but found his happiness finally in England.

The Mahila Samitis.

THE Women's Institutes of England, which work for improving and developing the conditions of rural life by providing centres for educational activities and social intercourse, are now recognised as a great national institution for good. But it is not so generally known that an almost similar organisation exists in India, with flourishing headquarters in Bengal.

The Mahila Samitis (which, being translated, mean Women Associations) were started as far back as 1913 by Sarej Natmi Dutt, the wife of Mr. G. S. Dutt, a member of the Indian Civil Service.

Mrs. Dutt, having travelled much with her husband, was a woman of broad views and outlook. Realising the hard lot of India women under the purdah system, she strove at all times to foster a spirit of social intercourse among women, and, coming to the conclusion that this could best be done by forming women's societies, she founded these Institutes or Mahila Samitis, which have proved an even greater boon to the women of Bengal than to their sisters in England.

They have opened up such a wide field of interests, hitherto quite undreamt of by these women and girls. Although Mrs. Dutt passed away in 1925, her work lives on, growing and spreading more wonderfully from year to year, because her countrymen, recognising the importance of what she had accomplished in so short a period, lost no time in organising as a memorial to her name, the Association which to-day carries out her ideals and aspirations.

Women Engineers.

THE old belief that a "mechanical brain" was an unknown quantity so far as women were concerned, got its first solid refutation during the war, when the woman motor driver

*Music is in all growing things
And underneath the silky wings
Of smallest insects there is stirred
A pulse of air that must be heard;
Earth's silence lives, and throbs, and sings.*—Lathrop.

showed she could prove as good a mechanic as her brother.

Since then women have travelled far in this branch of industry; the woman engineer is very much of an established fact, and there is now a very flourishing Women's Engineering Society in England.

The Well-cut Glove.

GLOVES are nearly all washable. Chamois for the country, suede for the town, and in pale colours which run through all the biscuit shades, all the beiges, all the whites. Some have fancy stitchings, some have little gauntlets piped, stitched, incrustated, and embroidered with the Aubusson stitch in delicate Aubusson colours. It is not easy to get gloves which fit perfectly when they are of the washing kind, but it is getting easier, since the glove-makers are cutting their gloves to allow for stretching and shrinking, according to the material used to make them. It is usually wise to have your gloves a size too large when they are for hard wear and have to be washed frequently. It is wise, too, to measure the fingers and thumb very carefully, because after washing the glove which is too short in the fingers looks clumsy and is not comfortable. The well-gloved hand is a sign of good dressing once more. The negligence which marked this detail during a short period has passed, and the well-cut, well-worn glove has returned to fashion and its old significance of gentle breeding.

As the essence of courage is to stake one's life on a possibility, so the essence of faith is to believe that the possibility exists.

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Good-natured chance guides both our careless feet

To wander through the winding City maze,

Or by the river or the woodland ways,
Until, as if by accident, we meet;
And with extended hands and smiles we greet

Each other, seeking out some gracious phrase

To show our pleasure and prolong delays—

Then part again with some well-worn conceit.

Have you not thought, as I have often times,

That these chance meetings are not wholly chance,

But some love story that we both rehearse,

Our meetings marking as by perfect rhymes

The joy and sadness of some great romance

In which we both shall speak the final verse.

Schoolboy Howlers.

THE following howlers are given exactly as the boys in his class wrote them originally: Stipend: "When you are in a room full of smoke you are stipend." "What a parson preaches his sermon on." Rector: "Something worked by electricity." "Something in parts to be put together." Somnambulist: "A man who writes a novel." "A man who writes a poem, but is frightened to send it up because they might say nasty things about it." "A very clever person." Strathspey: "A battle with spades." "An empty whisky bottle."

Are Women Revolutionaries?

RECENT statistics reveal the fact that there are 5,000,000 more women than men in Soviet Russia, and that of 71,000,000 voters only 24,000,000 are men. Can it be true that women are more revolutionary than men?

Tonking's Linseed Emulsion
is a Certain Cure for Coughs and Colds

Some Features of Next Week's Programmes

"A PERFECT PAIR" AT 1YA RUSSIAN SONGS AT 2YA

A ONE-ACT COMEDY

FEW operatic solos are better known than those of the "Bohemian Girl," excerpts from which are to be sung at 1YA on Tuesday evening. Everyone enjoys such favourites as "I Dreamt that I Dwelt in Marble Halls," as sung by the young princess who, when very young, was kidnapped by gypsies. This will be one of the numerous solos which will be sung by the cast headed by Madame Irene Ainsley on Tuesday evening.

The same vocalists will also contribute to the first portion of the programme. There will be two orchestral relays from the Majestic Theatre, and instrumental items will be contributed by Miss Ina Bosworth (violinist) and by the Auckland Trio.

"Captain Hobson" will be the subject of Mr. A. B. Chappell's next series of talks on "Old New Zealand."

WEDNESDAY evening's programme will consist of a relay of the concert to be given by the Auckland Municipal Band. From the studio vocal items will be given by the Hazell-Sutherland Duo, who have selected a choice budget of songs for rendition.

THE Clifton Glee Singers, as Miss Alma McGruer, Miss Beryl Smith, Mr. James Simpson, and Mr. Duncan Black will be known, will make their initial appearance on Thursday evening. They will present solos and choruses. One very entertaining item will be a musical switch, rarely heard in vocal form. Another chorus will be the harmonious "Sunday Morning." Still another song, with chorus, will be "Cut Yourself a Piece of Cake," and the final chorus will be "Plantation Melodies." On the solo side, all the artists will contribute, and two duets as well will be sung.

Humour will be a feature of Thursday evening's programme. Dismal like and Happy Abe, the Hebrew Two, will provide more of their own original comedy, and Messrs. Harris and Mackle will present a sketch from "As You Like It."

Another instrumental quartet, members of the Auckland Artillery Band, will be appearing for the first time on Thursday. Other instrumental music will be provided by Mr. Cyril Towsey and the Auckland Trio. Two banjo items will be electrically reproduced.

FRIDAY'S programme will further enhance the popularity of the entertainments of this evening of the week. The vocal items which will be given by the St. Andrew's Quartet will be, as usual, diversified and artistically rendered. Two of the choruses will be from "The Mikado." Others will be Brahms' "Cradle Song" and Bantock's "Music when Soft Voices Die." Solos will be "The Enchantress," "Farewell in the Desert," and "An Irish Folk Song."

A one-act comedy, "A Perfect Pair," will be staged at 1YA on Friday evening by the Auckland Comedy Players, under the direction of Mr. J. F. Montague, in conjunction with Miss Joy Bartley, who is making her first appearance before the microphone, though well known in Auckland dramatic circles. Mr. Montague will also give "Off and On," a humorous item. The instrumental section of the programme will be provided by the Auckland Trio, Miss Molly Wright (cellist) by relays from the Strand Theatre, and by several specially selected gramophone records electrically reproduced.

CONTRIBUTING to Saturday evening's programme will be the popular Lyric Quartet, assisted by the Bohemian Trio. The quartet's numbers include "The Way of the World," "Eileen Aalumah," and a novelty musical middle arranged by the Lyric Quartet. Vocal solos include "For the Green," "Who is Sylvia?" and "Gentlemen, the King," while Mr. Alan McElvain will be heard in further selections from his humorous repertoire. Popular selections by the Bohemian Trio will be "Mandalay," "When You're Lonely," "Breeze," and "Hawaiian Blues." The studio programme will be followed with a relay of dance music from the Dixieland Cabaret, where the orchestra is under Mr. Harry Neilson.

Warner, the American radio operator, who accompanied Kingsford Smith in his flight across the Pacific, was under a pledge of secrecy to interests in America, who are to get the full story of the radio work of the journey. Telegrams from every Australian State reached him, asking for his description. He good-humouredly shook his head, and in his inimitable drawl said: "Waal, I would if I could, but y'see, I jest can't, that's all." It is expected that he and Lyon will each make about \$50,000 in America, hence the secret of their desire for a quick return.

ANOTHER unique programme by the Ariel Singers will be presented at 2YA on Monday next, when all the items will be Russian, it being certain that no one school of music at the present time is having a greater influence on modern composition.

The youngest of all the "National" schools, Russian music, extraordinary as it now is, was born in the far distant age of minstrelsy. Up to the time of Glinka (born 1803), however, it may almost be said to have remained (in spite of the work of Tchaikovsky, Verstovsky and others) an immense number of crude but beautiful folk



Miss Dorothy Skinner,
Contralto at 4YA.
—Artlite Photo.

songs and tunes awaiting the touch of the master-composer (and the publisher). Glinka's amalgamation of folk and art music, his use of the extraordinary native method of choral accompaniment, and many other characteristics of his genius, all helped to give a great impetus to the tradition of queer Russian musical nationalism, since advocated, improved upon, expanded, and strengthened with increasing enthusiasm, and with some weird results by Dargomitsky (the "rationalist" who immediately succeeded the "nationalist"—1813), the

Lily Mackie, and "Gentle Moon," to be sung by Mr. Arthur Coe and Mr. Len Barnes. Mrs. Alice Harris will sing "The Old-Fashioned Cloak" from "The Rebel Maid," Miss Lily Mackie "The Pool of Quietness," and Mr. Arthur Coe, "When Through the Musetta." Mr. Len Barnes has selected "Inter Nos," "With a Heart Bounding Gaily," and will repeat, by request, that magnificent dramatic number of Loewe, "Edward." This is a dialogue between mother and son. The latter has killed his father at his mother's request, and in a dramatic climax he calls the curse of hell upon her.

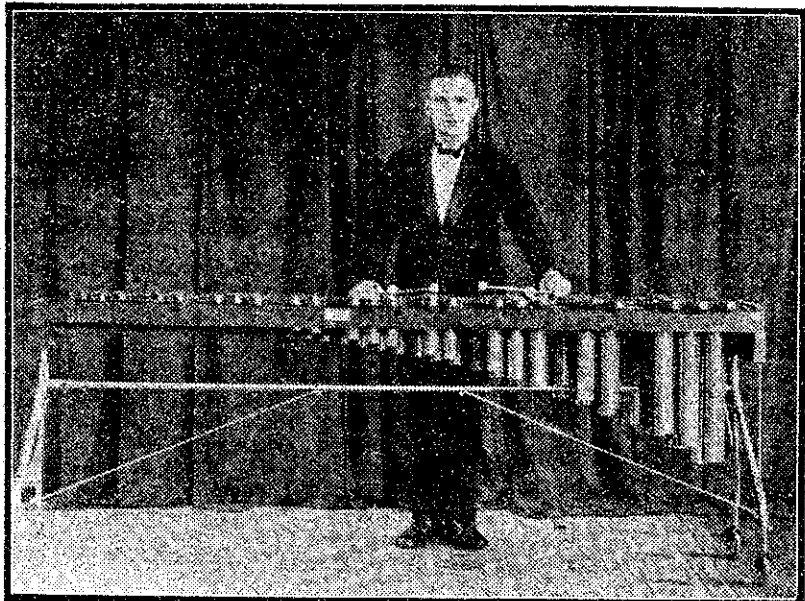
To Tuesday evening's popular programme Miss Rose Carte, who is making her first appearance before the microphone, will contribute humorous items. Miss Carte is a talented entertainer, and her initial effort "on the air" will be eagerly awaited. The Palmer Hawaiian Trio will be heard in popular selections, and there will be a relay of organ music from Taranaki Street Methodist Church, with Mr. H. Temple White at the organ.

THE Mellow Fellows will be on the air again from 2YA on Thursday. The programme includes specialty items, some arranged by the Fellows themselves, and some composed by lesser lights such as Sanderson, Carl Bohm, or C. J. Dennis. Joking aside, it will be an evening which will appeal to most listeners. "So Do It" is an arrangement of a very well-known old air, with words not so well known (yet), which will be of interest to ladies. Each item besides is in the hands of a capable exponent, who can be relied upon to give a creditable and enjoyable rendering. Another welcome contributor to the vocal section of the programme will be Miss Ailsa Nichol, soprano, who has chosen some delightful songs for the evening.

The instrumental music portion of the programme will be provided by the band of the 1st Wellington Regiment, under Lieutenant Shardlow.

Mr. Johannes Andersen will deliver another of his very popular and interesting lectures on "Native Birds" on Thursday evening.

THERE is plenty of variety in the numbers to be given by the Etude Quartet on Friday. "Soft and Low" (from the "Mock Doctor" by Gounod) and "See Our Oars with Feathered



Mr. E. Andrews, Zylphonist, heard from 4YA.
—Artlite, photo.

"Fire" (Balakiref, 1836, Cui 1835, Borodin, 1834, Moussorgsky 1839, and Rimsky Korsakof 1844), Scriabin 1872, Rachmaninoff 1873, Stravinsky 1882, Glazanof 1865, and a host of others, nearly all of whose work bears the hall-mark of genius. Rubinstein (1830) and Tchaikowsky (1840) are both Russians, certainly, but could never be mentioned among the foregoing as "Nationalists."

The programme of Russian music to be presented by the Ariel Singers on Monday is as representative as circumstances will permit, but an idea of the magnitude of the subject can only be gained by hearing and studying first-class performances of characteristic orchestra, string and operatic works.

Mr. John Prouse, the well-known baritone, will be heard again on Monday evening; Miss Margaret Keegan, L.T.C.L. (pianiste), will play specially selected numbers, and Mr. A. Stanley Warwick will present some further elocutionary numbers from his extensive repertoire.

ON Tuesday the Orpheus Quartet will sing "When the Budding Bloom of May" (from "Haddon Hall," by Sullivan), and also "Sleep, Darling, Sleep," by Martin. Two duets will be given—"A Summer Evening," to be sung by Mrs. Alice Harris and Miss

SCOTTISH NIGHT AT 3YA

MR. CHAS. LAWRENCE heads the list of the artists who will supply the vocal portion of the programme on Monday evening. The musical interludes on the piano, with song and patter, for which Mr. Lawrence is responsible, are always extremely popular. He will present a fresh budget on Monday evening.

Artists new to 3YA studio will be performing on Monday evening. The first to appear will be Mr. W. H. Browne, the possessor of a baritone voice of good quality. Then will come Miss Evelyn Hill, whose cultured soprano voice has been heard in solo work at concerts given by the Christ-



Miss Nancy Abernethy,
Elocutionist, heard from 2YA.
—Artlite Photo.

church Harmonic Society. She is a pupil of Madame Otley. Two other singers will be Mr. Tom Cook, who has a sweet tenor voice, and Mrs. E. J. Davies, a gifted mezzo-soprano.

MISCELLANEOUS musical items will constitute the entertainment to be given by 3YA on Wednesday evening. The vocalists will be the members of the Dulcet Quartet—Miss Nellie Lowe, Miss Hilda Hutt, Mr. T. G. Rogers and Mr. A. G. Thompson—who will sing solo and concerted numbers. A fine selection of vocal gems will be presented. No less splendid will be the instrumental items, which will be rendered by the Studio Trio, Miss Irene Morris (violiniste), Mr. Percy Reeves (trumpeter) and Mr. E. G. Williams (trombonist).

Elocutionary items by Mr. Richard R. Wills will be given on Wednesday evening. These will be "The Ballad of John Nicholson," "The Lure of the Little Ones" and "Jock Tamson's Ride." Mr. Wills was a prize-winner at the recent Christchurch Competitions.

MR. OLIVE HINDLE, a well-known and very popular baritone in Christchurch, but new to radio, will be heard on Thursday evening. He is taking the place of Mr. Bernard Rennell as a member of Madame Gower-Burns's Grand Opera Quartet. While welcoming Mr. Hindle, listeners will regret losing Mr. Rennell, whose private affairs prevent him continuing owing to the demands which the radio service makes on his time. Mr. Hindle will make his radio debut in a popular Scottish concert. His solo items will be "Scottish Emigrant's Farewell," "John Grumbie," "The Dell's Awa with the Excelsman," and "Border Ballad."

A rich treat for all will be the Scottish concert on Thursday. The programme will comprise a collection of the most heroic of the songs of old Scotland, as well as some of the most sentimental and plaintive—and there will be a liberal portion of real Scottish humour, which latter will be supplied by Mr. H. Instone. The instrumental music for the evening will be contributed by the Studio Trio, Miss Aileen Warren (pianiste), Mr. S. E. Munday (clarinet), and Mr. W. Hay (flute). The concert will conclude, very appropriately, with the singing of "Auld Lang Syne."

FLUTOW, whose "Martha" is to be broadcast on Friday evening, certainly possessed the gift of melody. Excerpts from this very popular opera will be sung by the Melodious Four—Miss Frances Hamerton, Miss Belle Renant, Mr. Russell Sumner, and Mr. T. D. Williams. These excerpts will consist of solos, duets, and quartets. "Martha" rises to great heights in inspiration and in musical melody.

Interspersing the vocal music will be instrumental items, which will include cornet solos by Mr. S. J. Creagh, cello solos by Mr. Harold Beck, and piano-forte novelties by Mr. Ivan Perrin.

There will also be elocutionary items by Mr. Hiram Dunford on Friday evening, one piece being "Rubenstein's Playing." All who heard Mr. Dunford's splendid rendition of "The Bells" will look forward to an equally masterful handling of the piece so graphically descriptive of a famous pianist.

NEW melodies typical of the Southern States will be sung by the Avonion Minstrels on Saturday evening. This male quartet is always much appreciated, and helps materially to make a great success of Saturday evening vaudevilles. Solos will also be sung by the minstrels, and there will be a duet—all of which will appeal to the popular taste.

Another soloist who will appear on Saturday evening will be Miss Gladys Brooks, a pupil of Miss Jessie King, and possessed of a fine soprano voice. Miss Agnes Richardson is also appearing. She has a splendid contralto voice.

On the novelty side of the evening's programme will be found Mr. E. W. Heald (English concertina solos), Mr. Alfred Tohill (mouth organ solos), and Mr. Stan Birch (banjo-mandolin solos).

Humorous recitations will be given by Miss Naare Hooper on Saturday evening. One of her items will be from Sheridan's "School for Scandal," and another will be "Von Monts Notices," which is how a French maid discusses her "one month's notice."

4YA ENTERTAINMENT

THE Kaikorai Band, which will be supplying the instrumental music for Tuesday evening's concert, has arranged a first-class programme. The supporting vocal programme will also be of a bright and engaging nature. Artists contributing will be Miss Wyn McPeak (contralto), Mr. R. B. Macdonald (baritone), Mr. Charles Edwards (tenor), and Mr. E. G. Bond (bass). Elocutionary recitals will be given by Miss Madge Yates, whose items will be "Mrs. McLeerie's Country Visit" and "Admiral's Orders." Humorous recitations will be given by Mr. Eric Hebdan and there will be a humorous address by Pastor More.

AN entertainment of the popular type, with a liberal admixture of humour, will be broadcast on Wednesday evening. Light songs will be sung by Miss Jacqueline Burke, Miss Vanda

(Continued on page 14.)

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Full Programmes for Next

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NOTES AND COMMENTS

(By "Switch.")

LAST Sunday week we all got a shock when we attempted to tune in the Australian stations for their evening programmes. The majority of the Aussies were inaudible, and the few were a mere whisper.

NATURALLY, sets were blamed by many listeners, and "Switch" heard of several amusing experiences. One young man tested all his valves, his transformers and his loudspeaker cord—then went to bed.

ANOTHER undid several of his wired connections in his set (a home-built affair) and put his soldering iron into commission. Eventually he gave the thing up and carted his set down to a professional the next morning to get him to run over it.

YET another listener blamed his outfit and tested his B batteries. He did make a useful discovery, however, and that was that one block of 45 volts was down to 35 volts. This block was respectfully interred in the dust-bin next morning.

"SWITCH" had already tried out 3YA, Christchurch, and 1YA, Auckland, and found both stations debilitated. Atmospheric and induction, on the other hand, were sufficiently lively to indicate that his set was O.K. On reaching out for the Aussie stations, "Switch" realised there was something wrong in the air, and his mind flew back to some four years ago, recalling a similar experience.

IT all came about through a magnetic storm which was sweeping around this stodgy old earth of ours. The Press cables brought news of the Aurora Australis having been witnessed in Sydney and Melbourne, and another message from Christchurch reported a like occurrence down there.

LATER cables related a disruption of the radio beam and cable services, magnetic storms in Canada, with vivid displays of the Aurora Borealis. The period of this kick-up coincided with the Sunday night's experience in New Zealand.

MOTHER Earth, apparently, was suffering from an overdose of electricity, and was undergoing an attack of magnetic fever. This invariably plays havoc with wireless and cable communication.

"SWITCH" promptly telephoned several radio friends on the Sunday night, and relieved their anxiety as to whether their sets or the atmosphere were to blame. One gentleman, quite a veteran at the game, had forgotten the possibility of a magnetic storm and had spent half an hour going over his outfit. He was much relieved when "Switch" related his own experience and suggested an electrical phenomenon as the culprit.

I NOTICE in last week's "Radio Record" an up-country correspondent condemning the soliciting, by broadcast performers, of contracts from listeners regarding their contributions. The thing used to be rather frequent in Australia, but evidently it has now been stopped by the broadcasting company, who apparently recognised that the practice is undesirable. As a matter of fact, the broadcasting companies are directly responsible to the listeners for their services and therefore criticisms should be addressed direct to the broadcasting companies—not intercepted by the performers. This is a clearly logical contention.

FOR example, "Mr. Loudvoice" is tried out with a "new and novel act, quite unique in its way." "Mr. Loudvoice" announces to listeners: "I'd like listeners to write to me stating whether they appreciated my contributions." The broadcasting company wonders how the listeners liked "Mr. Loudvoice," but the comments are diverted to that gentleman, and the company is left wondering.

THERE is a first-rate little station in Sydney—2UE—which on occasions gives New Zealanders splendid items from their loudspeakers. 2UE is only a squib with regard to aerial input, which is only a fraction of its power according to the Australian rating, which is set down at 250 watts.

THOSE who operate four or five-valve sets will, on some evenings, get fair loudspeaker reception from 2UE, Sydney. This station will be found on about 293 metres (1023.8 kilocycles), or a little below the wavelength, in metres, of 3YA, Christchurch.

ANOTHER minor Sydney station, 2GB, 316 metres (958.4 kilocycles) is heard quite well in New Zealand on many evenings in a month. 2GB has a tendency to get tangled up in 3YA, Christchurch, and several listeners have told me they get a bubbling heterodyne whistle from 2GB when they tune in 3YA, Christchurch.

Sunday, July 22

1YA, AUCKLAND (333 METRES), SUNDAY, JULY 22.

- 3 p.m.: Afternoon session—Selected studio items.
4.0: Literary selection by the Announcer.
4.8: Selected studio items.
4.30: Close down.
6.0: Children's song service, conducted by Uncle Leo, assisted by cousins from Howe Street Brethren Sunday School.
6.55: Relay of service from Beresford Street Congregational Church. Preacher, Rev. Lionel Fletcher. Choirmaster, Mr. William Gemmell.
8.30: Relay of concert by the Auckland Municipal Band, under the direction of Mr. Christopher Smith, military band selections.
9.30: Close down.

2YA WELLINGTON (420 METRES), SUNDAY, JULY 22.

- 9 a.m.: Result of "All Blacks" match in South Africa.
9.15: Close down.
3.0 p.m.: Afternoon session—Selected studio items.
6.0: Children's Sunday service, conducted by Uncle Ernest, assisted by choir from Petone Church of Christ.
6.55: Relay of evening service from Vivian Street Baptist Church—Preacher, Rev. E. E. Harry. Organist, Mr. Chas. Collins. Choirmaster, Mr. J. R. Samson.
8.15 (approx.): Relay of band recital of the Port Nicholson Silver Band from the Grand Opera House. Conductor, Mr. J. J. Drew.
Close down.

3YA CHRISTCHURCH (306 METRES), SUNDAY, JULY 22.

- 9.0 a.m.: Result of "All Blacks" match in South Africa.
3.0 p.m.: Afternoon session—selected studio items.
5.30: Children's song service—Uncle David, assisted by scholars from Linwood Congregational Sunday School.
6.30: Relay of service from Trinity Congregational Church, Worcester Street—Preacher, Rev. D. Gardiner-Miller. Organist, Mr. Alec Mill. Musical Director, Mr. A. G. Thompson.
8.15: (approx.) (conditions permitting): Rebroadcast of 2YA Wellington (relay of concert by the Port Nicholson Band, from the Grand Opera House).
Close down.

4YA, DUNEDIN (463 METRES), SUNDAY, JULY 22.

- 5.30 p.m.: Result of "All Blacks" match in South Africa.
5.31: Children's song service, conducted by Big Brother Bill, assisted by children from St. Andrew's Street Church of Christ Sunday School.
6.30: Relay of service from the Methodist Central Mission—Preacher, Rev. W. Walker. Organist, Mr. Chas. A. Martin.
8.0: Relay from His Majesty's Theatre of concert by the Kaikorai Band under the conductorship of Bandmaster E. Franklin.
9.15: Close down.

Monday, July 23

1YA, AUCKLAND (333 METRES), MONDAY, JULY 23.

SILENT DAY.

2YA, WELLINGTON (420 METRES), MONDAY, JULY 23.

- 3 p.m.: Chimes of the G.P.O. clock.
3.1: Selected gramophone items.
4.30 and 4.55: Sports results to hand.
5.0: Close down.
6.0: Children's session—Aunt Gwen and Uncle Jeff, assisted by Junior Red Cross, Chilton House School. Choruses, stories, songs, puzzle, and birthday greetings.
7.0: News session, market reports, and sports results.
8.0: Chimes of the G.P.O. clock.
8.1: Overture—The Orchestra, "Mirelle" (Gounod-Borch).
8.9: Vocal quartet—Ariel Singers, "How Sweet the Moonlight Sleeps" (Leslie).
8.13: Recital—Mr. A. Stanley Warwick, "On Being Asked the Way" (Caine).
8.19: Instrumental trio—Symons-Ellwood-Short Trio, "Trio in G" (Beethoven).
8.20: Baritone solos—Mr. John Prouse, (a) "May Night" (Brahms); (b) "Vulcan's Song" (Gounod); (c) "There is a Lady" (Harwood); (d) "The Minstrel Boy" (Moore).
8.41: Pianoforte solos—Miss Marjorie Keigan, L.T.C.L., (a) "Novelette in F" (Schumann); (b) "Spinning Song" (Chaminade).
8.49: Tenor solo—Mr. Roy Hill, "Two Pastoral Songs" (Quilter).
8.58: Symphony—The Orchestra, "Symphony No. 5, C Minor" (first movement) (Beethoven).

- 9.6: Weather forecast.
9.8: Soprano solo—Miss Jeanette Briggs, L.A.B., "The Nightingale" (Stephens).
9.12: Instrumental—The Orchestra, repeat number.
9.20: Bass solo—Mr. J. M. Caldwell, "Captain Danny" (Loughborough).
9.24: Vocal duet—Misses J. Briggs and N. Coster, "O, Wert Thou in the Cauld Blast?" (Mendelssohn).
9.28: Cello solo (orchestral accompaniment)—"Prelude and Clair de Lune" (Massenet). Soloist, Mr. Geo. Ellwood.
9.38: Tenor solo—Mr. Roy Hill, "An Island Shieling Song" (Hebridean folk song, arr. Kennedy Fraser).
9.43: Recital—Mr. A. Stanley Warwick, "The Man from Eldorado" (Service).
9.49: Mezzo-contralto solo—Miss Ngaire Coster, "My Dear Soul" (Sander-son).
9.53: Vocal quartet—Ariel Singers, "Ye Banks and Braes" (arr. Lambert).
9.57: Instrumental—The Orchestra (clarinet soloist, Mr. A. H. F. Wright), "Slavonic Rhapsody" (Friedmann).
10.7: God Save the King.
Note.—The above programme is subject to alteration, as during the evening a description of the Jack Carroll-Harry Casey boxing match will be broadcast.

3YA, CHRISTCHURCH (306 METRES), MONDAY, JULY 23.

- 3 p.m.: Afternoon session—Selected studio items.
4.25: Sports results.
4.30: Close down.
6.0: Children's session—Scatterjoy. Songs and recitations by Cousin Gladys. Violin solos, Cousin Beverley. Story-time, Scatterjoy, "Wonderful Friendships of Animal Pets for Their Masters." Scatterjoy will tell the children how to grow quaint new plants indoors.
7.15: News session.
7.30: Talk—Mr. E. J. Bell, "Books."
8.0: Chimes.
Programme by Christchurch Municipal Band and assisting artists.
8.1: March—Band, "The Exile" (Round).
8.3: Baritone solo—Mr. W. H. Browne, "Asleep in the Deep" (Petrie).
8.10: Selection—Band, "Le Domino Noir" (Anber).
8.22: Soprano solo—Miss Eveline Hill, "Break of Day" (Sanderson).
8.26: Entertainment at the piano—Mr. Chas. Lawrence, musical interlude on the piano, with song and patter (own arrangement).
8.31: Hymn—Band, "Abide With Me" (Monk).
8.36: Tenor solo—Mr. Tom Cook, "Down the Vale" (Moir).
8.40: Selection—Band, "Le Cirque" (Lithgow).
8.50: Mezzo-contralto solo—Mrs. E. H. Davies, "Sunshine and Rain" (Blumenthal).
8.54: Recital—Miss Maiona Juriss, "The First Survivor" (Paterson).
8.59: Weather forecast.
9.0: Overture.
9.4: Baritone solos—Mr. W. H. Browne, (a) "An Emblem" (Thompson); (b) "Twas Only an Irishman's Dream" (Cormack).
9.11: March—Band, "Carry On" (Round).
9.16: Mezzo-contralto solos—Mrs. E. H. Davies, (a) "A Bowl of Roses" (Clarke); (b) "Lay My Head Beneath a Rose" (Falkenstein).
9.23: Selection—Band, "Souvenir de Russe" (Rimmer).
9.38: Tenor solos—Mr. Tom Cook, (a) "The Lovelight in Your Eyes" (Dunkley); (b) "Absent" (Metcalfe).
9.40: Air varie—Band, "Welsh Melody" (Rimmer).
9.50: Soprano solo—Miss Eveline Hill, "Sing, Sing, Blackbird" (Phillips).
9.56: Selection—Band, "Andante in G" (Batiste).
10.2: Entertainment at the piano—Mr. Chas. Lawrence, another interlude on the piano, with song and patter (MS.).
10.6: Recital—Miss Maiona Juriss, "Wedding Whispers" (Newman).
10.11: March—Band, "Punchinello" (Rimmer).
God Save the King.

4YA, DUNEDIN (463 METRES), MONDAY, JULY 23.

SILENT DAY.

Tuesday, July 24

1YA, AUCKLAND (333 METRES)—TUESDAY, JULY 24.

- 3 p.m.: Afternoon session—Selected studio items.
4.0: Literary selection by the announcer.
4.8: Further studio items.
4.25: Sports results.
4.30: Close down.
6.0: Children's hour—Uncle George, assisted by pupils of Miss Blamires. Piano solo, Margaret Vause, "Snowdrops" (Wengel). Recitation, Elsie Timmons, "The Workmen." Song, Betty Chappell, "Fairies' Lullaby" (Feild). Piano solo, Eileen Knox, "Fantasies" (Carroll). Letters and birthdays. Duet, Thel Saunders and Elsie Timmons, "In Countryside" (Carroll). Recitation, Market Parkinson. Piano solo, Athol Jonas, "Prelude" (Rachmaninoff). Story-time.
7.15: Talk on Poultry-Keeping—Scientific Feeding, by Mr. George Ambler.
7.30: News and reports.
8.0: Chimes.
8.1: Relay of overture from Majestic Theatre Orchestra, under the direction of Mr. J. Whiteford-Waugh.
8.11: Baritone solo—Mr. Walter Brough, "Friend" (Davies).
8.15: Instrumental trio—The Auckland Trio, "Last Movement" (Arensky).
8.24: Contralto solos—Madame Irene Ainsley, (a) "Ideale" (Tosti); (b) "Nella Notte D'April" (Tosti).
8.30: Cornet solo—"Miserere," from "Il Trovatore" (Verdi).
8.34: Tenor solo—Mr. A. Ripley, "Take a Pair of Sparkling Eyes" (Sullivan).
8.38: Relay of vocal interlude from Majestic Theatre.
8.48: Violin solo—Miss Ina Bosworth, "1st Movement Concerto" (Mendelssohn).
8.52: Talk on Old New Zealand—Captain Hobson, by Mr. A. B. Chappell.
9.7: Weather forecast.
9.8: Cornet solo—"Flight of Ages" (Beyan).
9.12: Soprano solo—Miss Marjorie Faire, "Morning" (Speaks).
9.16: Instrumental trio—The Auckland Trio, "Little Modern Suite" (Rosse).
9.24: Presentation of excerpts from "The Bohemian Girl," by Balfe, produced under the direction of Madame Irene Ainsley.
Cast:
Count Mr. Walter Brough
Arlene Miss Marjorie Fair
Thaddeus Mr. Arthur Ripley
Chorus—"The Gipsy's Life."
Soprano solo—"I Dreamt That I Dwelt."
Duet—"The Wound Upon Thine Arm."
Contralto solo—"Love Smiles But to Deceive."
Soprano solo—"Come With the Gipsy Bride."
Baritone solo—"My Heart Bowed Down."
Quartet—"From the Valleys and Hills."
Tenor solo—"When Other Lips."
Trio—"Thro' the World."
10.0: God Save the King.

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2YA, WELLINGTON (420 METRES)—TUESDAY, JULY 24.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session—Big Brother Jack. Unison song, Thorndon Normal School, "Dye Ken John Peel." Birthdays. Unison song, Thorndon Normal School, "An Evening Song." Recitation, Cousin, "When Willie Thompson Comes to Tea" (MS.). Song, Cousin, "Little White Hill of Dreams." Unison song, Thorndon Normal School, "The Whistling Farmer Boy."
 7.0: News session, market reports and sports results.
 7.40: Lecture by a representative of the Agricultural Department—"For the Man on the Land."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—The Orchestra, "Carmen" (Bizet).
 8.9: Vocal quartet—Orpheus Quartet, "Sleep, Darling, Sleep" (Martin).
 8.13: Violin and piano solo—Miss Ava Symons and Mr. Gordon Short, "1st Movement of Sonata for Violin and Piano" (Dohnanyi).
 8.21: Soprano solo—Mrs. Alice Harris, "The Old-Fashioned Clock" (Phillips).
 8.25: Instrumental trios—Palmer's Hawaiian Trio, (a) "Shine on, Harvest Moon" (Norworth); (b) "Heelie Jeebie Dance" (Dupont and Pola).
 8.32: Vocal duet—Messrs. Len Barnes and Arthur Coe, "Gentle Moon" (Schartau).
 8.36: Instrumental—The Orchestra, (a) "Serenata" (Moszkowski); (b) "Hungarian Dance" (Brahms).
 8.41: Humour—Miss Rose Carte, "Reggie" (Hashi).
 8.49: Contralto solo—Miss Lily Mackie, "The Pool of Quietness" (Caton).
 8.53: Relay of organ solos by Mr. H. Temple White, (a) "Le Soir" (Gounod); (b) "Chorale and Minuet from Suite Gothique" (Boellman).
 9.5: Test transmission and lecture, by Mr. W. J. Bellingham, Director of Music.
 9.25: Tenor solo—Mr. Arthur Coe, "Who Thro' the Musetta" (Mendelssohn).
 9.29: Instrumental—The Orchestra, repeat number.
 9.37: Baritone solos—Mr. Len. Barnes, (a) "Edward" (Loewe); (b) "Inter Nos" (MacFadyen); (c) "With a Heart Bounding Gaily" (Mascenet).
 9.47: Instrumental—The Orchestra, "Bing Boys."
 9.55: Humour—Miss Rose Carte, "Taking Willie to Lunch" (Anon.).
 10.0: Instrumental trios—Palmer's Hawaiian Trio, (a) "Dew, Dew, Dewy Day" (Sherman); (b) "Love Is Just a Little Bit of Heaven" (Baer).
 10.7: Vocal quartet—Orpheus Quartet, "When the Budding Bloom of May" (Sullivan).
 10.11: Instrumental—The Orchestra, latest dance novelties.
 10.20: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—TUESDAY, JULY 24.

SILENT DAY.

4YA, DUNEDIN 463 (METRES)—TUESDAY, JULY 24.

- 3 p.m.: Town Hall chimes.
 3.1: Gramophone concert.
 3.30: Social notes and news.
 3.40: Studio music.
 4.0: An address on "Art Needlework" by Miss Marguerite Puechegud (under the auspices of the Technical College).
 4.15: Gramophone music.
 4.25: Sports results.
 4.30: Close down.
 6.0: Town Hall chimes.
 6.1: Children's session—Big Brother Bill. The musical portion of this programme will be provided by the choir of the Anglican Boys' Home (Matron, Mrs. Gerrard). Mr. Abel, Headmaster of High Street School, will give a talk on "The Story of a Great Ship."
 7.15: News session.
 7.30: An address on "Tourist Resorts" by Mr. R. W. Marshall, Manager of Dunedin Tourist Office.
 8.0: Town Hall chimes.
 Concert by the Kaikorai Band, under Bandmaster E. Franklin, and assisting artists.
 8.1: March—Band, "The Captivator" (White).
 8.5: Baritone solos—Mr. R. B. Macdonald, (a) "Tommy Lad" (Margeson); (b) "O Western Wind" (Brahms).
 8.11: Recital—Miss Madge Yates, "Mrs. McLeerie's Country Visit."
 8.15: Overture—Band, "Bohemian Girl" (Balfe).
 8.25: Contralto solo—Miss Wyn McPeak, "Softly Awakes My Heart" (Saint-Saens).
 8.29: Address—Pastor W. D. More.
 8.44: Waltz—Band, "Destiny" (Baynes).
 8.54: Vocal duet—Messrs. Chas. Edwards and R. B. Macdonald, "The Day is Done."
 8.57: Humorous recital—Mr. Eric Hebden, "My Financial Career" (Leacock).
 9.2: Weather forecast.
 9.4: March—Band, "On the Quarter Deck" (Alford).
 9.8: Bass solos—Mr. E. G. Bond, (a) "Friend o' Mine" (Sanderson).
 9.15: Humorous sketch—Miss Madge Yates and Mr. Eric Hebden, selected.
 9.22: Euphonium solo (with band accompaniment), "O Star of Eve" (Wagner).
 9.28: Tenor solos—Mr. Chas. Edwards, (a) "The Trumpeter" (Dix); (b) "O Ship of My Delight" (Phillips).
 9.34: Selection—Band, "Song Echoes" (arr. Rimmer).
 9.44: Contralto solos—Miss Wyn McPeak, (a) "Three Fishers Went Sailing" (Hullah); (b) "Slumber Song" (McDowell).
 9.50: Recital—Mr. Eric Hebden, "The Chairman's Remarks" (Stewart).
 9.56: Intermezzo—The band, "In a Monastery Garden" (Ketelby).
 10.2: Baritone solo—Mr. R. B. Macdonald, "Yeoman's Wedding Song" (Pon-tiawski).
 10.6: Recital—Miss Madge Yates, "Admiral's Orders" (Townsend).
 10.11: Bass solo—Mr. E. G. Bond, "Song of Hybris the Cretan" (Elliott).
 10.14: March—The band, "B.B. and C.F." (Hume).
 10.18: God Save the King.

Wednesday, July 25

1YA, AUCKLAND (333 METRES), WEDNESDAY, JULY 25.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Further studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session, conducted by Uncle Tom. Story for tiny tots. Recitation, Jean Gregg, "The Boy and the Pin." Letters and birthdays. Song, Uncle Tom. Musical sketch, Jean Gregg, "At the Dentist's." Bedtime stories.
 7.15: Talk by "Gargoyle" on "Motor Troubles and Remedies."
 7.30: News and market reports.
 7.45: Close down.
 8.0: Chimes.
 8.1: Relay of Auckland Municipal Band, under Mr. Christopher Smith, assisted by the Hazell-Sutherland Duo, who will perform the following items from the studio:—
 Contralto solos—Miss Phyllis Hazell, "When I'm Home Again" (Wood); (b) "Little Blue Boy" (Del Riego).
 Baritone solos—Mr. Frank Sutherland, (a) "The Sweetest Flower that Blows" (Hawley); (b) "You Along o' Me" (Sanderson).
 Duo—Hazell-Sutherland Duo, (a) "Hold Thou My Hand" (Briggs); (b) "The Dream Minuet" (Beethoven).
 10.0: God Save the King.

2YA, WELLINGTON (420 METRES), WEDNESDAY, JULY 25.

SILENT DAY.

3YA, CHRISTCHURCH (306 METRES), WEDNESDAY, JULY 25.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session—Uncle Peter and Mother Hubbard. Stories and greetings by Uncle Peter. Songs by Mother Hubbard. Recitations by Little Red Riding Hood. Songs by Little Miss Muffett.
 7.15: Market reports.
 7.30: News session.
 8.0: Chimes.
 Relay of orchestral music from the Strand Theatre Orchestra, under the direction of Mr. Harry Elwood.
 8.8: Baritone solo—Mr. A. G. Thompson, "Coming Home" (Willeby).
 8.12: Trumpet solo—Mr. Percy Reeves, "Rose Softly Blooming" (Sophr.).
 8.16: Soprano solos—Miss Hilda Hunt, (a) "The Blue Alsatian Mountains" (Adams); (b) "April is a Lady" (Phillips).
 8.24: Violin solos—Miss Irene Morris, (a) "Larghetto" (Handel-Hubay); (b) "Schon Rosmarin" (Kreisler).
 8.32: Tenor solos—Mr. T. G. Rogers, (a) "Onaway! Awake, Beloved" (Taylor); (b) "Thy Beaming Eyes" (McDowell).
 8.40: Instrumental trio—Christchurch Broadcasting Trio, "Alla Marcia and Tarantella" (Hiller).
 8.50: Recital—Mr. R. R. Wills, "The Ballad of John Nicholson" (Newbolt).
 8.54: Vocal quartet—Dulcet Quartet, "Beleagured" (Sullivan).
 9.0: Weather forecast.
 9.4: Relay of orchestral music from the Strand Theatre.
 9.12: Contralto solos—Miss Nellie Lowe, (a) "Land of Mine" (Nutting); (b) "When You're Away" (Sanderson).
 9.20: Tenor trombone solos—Mr. E. G. Williams, (a) "The Firefly" (Moss); (b) "Santa Lucia" (Round).
 9.28: Baritone solos—Mr. A. G. Thompson, (a) "Billet Doux" (Lehmann); (b) "Eyes that Used to Gaze in Mine" (Lohr).
 9.34: Instrumental trios—Christchurch Broadcasting Trio, (a) "Nina" (Pergolesi-Kreisler); (b) "Spanish Dance No. 3" (Moszkowski).
 9.42: Contralto and baritone duet—Miss Nellie Lowe and Mr. A. G. Thompson, "Nile Waters" (Lohr).
 9.46: Recitals—Mr. R. R. Wills, "The Lure of the Little Ones" (Service); (b) "Jock Tamson's Ride" (MS.).
 9.53: Trumpet solos—Mr. Percy Reeves, (a) "Portia" (from "Merchant of Venice" Suite) (Rosse); (b) "Love Came from Fairyland" (Lincke).
 10.0: Vocal quartet—Dulcet Quartet, "Good Night, Beloved" (Pinsuti).
 God Save the King.

4YA DUNEDIN (463 METRES), WEDNESDAY, JULY 25.

- 2.45 p.m.: Relay from Carisbrook of description of First Inter-Provincial Rugby match at Dunedin.
 5.0: Close down.
 7.0: Town Hall chimes.
 7.1: Request gramophone concert.
 7.40: Burnside market report and news.
 8.0: Town Hall chimes.
 8.1: Relay of orchestral music from the Octagon Theatre Orchestra under the direction of Monsieur de Rose.
 8.11: Popular songs, Miss Vanda Duncan, (a) "Who-oo? You-oo! That's Who" (Ager); (b) "Hugs and Kisses" (Alter).
 8.18: Piano-accordion solo—Mr. E. Heeney, "When Other Lips" (Balfe).
 8.21: Humour—Mr. Keith Stronach, selected.
 8.26: Novelty piano solos, Mr. T. V. Anson, (a) "Baby Your Mother" (Burke); (b) "That Heebie Jeeby Dance" (Sola).
 8.34: Popular songs—Mr. Billy Gay, (a) "On a Dew, Dewy Day," (b) "You Don't Like It, Not Much" (Kahn).
 8.41: Marimba solo—Mr. H. Dalziel, "Blaze Away March" (Holtzman).
 8.45: Light mezzo-soprano solo—Miss Jacqueline Burke, "Sally" (Allen and Stanley).
 8.49: Humorous sketch—Miss Billie Lorraine and Major Lampen, "The Unreality" (Moore).
 9.0: Weather forecast.
 9.2: Relay of orchestral music from Octagon Theatre.
 9.12: Popular song—Miss Vanda Duncan, "Does She Love Me" (Coslow).
 9.16: Piano-accordion and marimba duets—Messrs. Heeney and Dalziel, (a) "Selection of Jigs," (b) "Spring Song" (Mendelssohn).
 9.23: Humour—Mr. Keith Stronach, selected.
 9.27: Novelty piano solo—Mr. T. V. Anson, "Breeze" (Hanley).
 9.31: Light mezzo-soprano solos—Miss Jacqueline Burke, (a) "C'est Vous" (Green); (b) "I'm Thinking of You" (Hirsch).
 9.38: Piano-accordion solo—Mr. E. Heeney, "Scotch Selection" (own arrangement).
 9.42: Popular song—Mr. Billy Gay, "What! No Spinach" (Aitken).
 9.45: Humour—Major F. H. Lampen, selected.
 9.50: Marimba solo—Mr. H. Dalziel, "Sometime" (Florito).
 9.53: Popular songs—Miss Billie Lorraine, (a) "You Can't Walk Back From an Aeroplane Ride" (Schwartz); (b) "Under The Clover Moon" (Friedlander).
 10.0: Close down.

Thursday, July 26

1YA AUCKLAND (333 METRES), THURSDAY, JULY 26.

- 3.0 p.m.: Afternoon session—selected studio items.
 3.30: Talk by representative of the Auckland Gas Company on Gas Cooking.
 3.45: Further studio items.
 4.0: Literary selection by the Announcer.
 4.8: Further studio items.
 4.25: Sports results.
 6.0: Children's hour conducted by Peter Pan, assisted by Bayfield School Choir. Two part song—the choir, "Ye Banks and Braes." Recitation—Jean Chalmers, "Vespers" (Milne). Song—Kathleen Winter, "Slumber Sea." Two part song—the choir, "A Perfect Day." Letters and birthdays. Piano solo—Lettie Burnet, "Evening Calm." Recitation—Dallas Lethaby, "The Wonder Child." Two part song—the choir, "Good Night." Storytime.
 7.15: News and market reports.
 7.30: Book review.
 8.0: Chimes.
 8.1: Orchestral—"Mignon Overture" (Thomas).
 8.9: Vocal Quartette—The Clarion Glee Singers, "Opening Chorus."
 8.13: Instrumental Quartette—The Auckland Artillery Brass Quartette, (a) "Hymn to Music" (Buck); (b) "Nabucco" (Verdi).
 8.19: Tenor solo—Clarion James Simpson, "I Heard You Singing" (Coates).
 8.23: Banjo—"Cocoanut Dance" (Herman).
 8.27: Harmony—The Clarions, "Musical Switch" (Arr. Black).
 8.31: Dialogue—Messrs. Harris and Mackie, scene from "As You Like It" (Shakespeare).
 8.36: Instrumental trio—The Auckland Trio, "Last Movement 4th Trio" (Mozart).
 8.44: Contralto solo—Clarion Beryl Smith, "Loving Time" (Richards).
 8.48: Vocal duet—Clarions Black and Simpson, "Watchman, What of the Night?" (Sargeant).
 8.52: Pianoforte solo—Mr. Cyril Towsey, "Rondo" (Field).
 8.56: Harmony—The Clarions, "Sunday Morning" (Hall).
 9.0: Weather forecast.
 9.1: Orchestral—"Merry Widow Selections" (Lehar).
 9.9: Soprano solo—Clarion Alma McGruer, "Faery Song" (Broughton).
 9.13: Instrumental Quartette—The Auckland Artillery Brass Quartette, (a) "Winter Winds" (Rimmer); (b) "Restless Waters" (Rimmer).
 9.20: Bass solo and chorus—Clarion Black, "Come to the Fair" (Martin).
 9.24: Banjo, "Persiflage" (Francis).
 9.28: Vocal duet—Clarions McGruer and Smith, "Awake!" (Pelissier).
 9.32: Instrumental trio—The Auckland Trio, "Merle England" (German).
 9.40: Song and chorus—the Clarions, "Cut Yourself a Piece of Cake" (James).
 9.44: Humour—The Hebrew Two, "Dismal Ike and Happy Abe."
 9.54: Harmony, The Clarions, "Plantation Melodies" (Arr. Black).
 10.0: God Save the King.

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WHEN one says the Australian stations regularly supply the New Zealand newspapers with their programmes it is not their fault if they do not reach our papers regularly. The inter-State mail service has been so disorganised by the recent prolonged hold up of the Ulmaroa that not infrequently the Australian programmes have reached the New Zealand Press a week too late. Now that the sea-cooks have agreed to cook again and the Ulmaroa has resumed running things have improved in the mail services.

THERE was some mention, in Australian files recently, of a reallocation of the wavelengths of the Australian broadcast stations. In case that the wavelengths of the New Zealand stations are likely to be overlooked by the Commonwealth authorities, it would not be amiss for one of our radio societies to drop the Australian Postmaster-General, Canberra, N.S.W., a letter giving the wavelengths of all the Dominion broadcasting stations, not forgetting the little ones at Gisborne, Auckland, Palmerston North, Christchurch, etc.

JUDGING by the announcements of the Australian "Uncles" and "Aunts" during the children's evening sessions, there is a considerable amount of correspondence received from New Zealand by the Aussie stations. And the Australian broadcasting companies much appreciate the fact that they have numerous listeners in New Zealand. As evidence of this they regularly supply the New Zealand papers with their programmes for publication.

THE aerial power of the Chelmsford, 5SW, English short-wave experimental station is 15 kw. This is the station which New Zealanders have heard relaying 2LO, London.

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Programmes Continued

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2YA WELLINGTON (420 METRES), THURSDAY, JULY 26.

- 3.0: Chimes of the G.P.O. clock.
3.1: Selected gramophone items.
4.30 and 4.55: Sports results to hand.
5.0: Close down.
6.0: Children's session—Aunt Gwen, assisted by pupils of Mrs. E. Mackay—Piano duet, Cousins Elsie and Hilda, "Grand Vitesse" (Mullen). Story, Aunt Gwen. Piano solo, Cousin Elsie, "Polonaise" (McDowell). Birthdays, Aunt Gwen. Song, Cousin Gwenda, "Spreading the News" (Oliver). Piano solo, Cousin Hilda, "Gipsy Rondo" (Haydn). Story, song, Cousin Gwenda, "There Are Fairies at the Bottom of our Garden" (Lehmann). Piano duet, Cousins Elsie and Hilda, "Spanish Dance" (Moskowski).
7.0: News session, market reports and sports results.
8.0: Chimes of the G.P.O. clock.
Studio concert by the Band of the 1st Battalion, Wellington Regiment (under the conductorship of Lieut. B. J. Shardlow), and assisting artists.
8.1: March—Band, "The B.B. and C.F." (Ord Hume).
8.6: Vocal quartet—Mellow Fellows, "So Do I" (original).
8.10: Selection—Band, "Echoes of Scotland" (Rimmer).
8.18: Quite different—The Tenor Fellow, "The Prison Song" (Carl Bohm).
8.23: Waltz—Band, "Ecstasy" (Baynes).
8.28: "Aussie" special—Another Bloke—"The Wedding" (from "The Sentimental Bloke" (Denis).
8.33: Selection—Band, "Lucia Di Lammermoor" (Donizetti).
8.43: Woman's Way—the Married Fellow, "Captain Mac" (Sanderson).
8.48: Cornet solo—Lieut. B. J. Shardlow, "The Pro" (Butch).
8.52: Soprano solos—Miss Ailsa Nichol, (a) "Waltz Song" (from "Tom Jones"), (b) "Poet's Life" (Elgar).
9.0: Weather forecast.
9.2: Lecture—Mr. Johannes Andersen, "Native Birds."
9.14: March—Band, "The 20th Century" (Ord Hume).
9.18: Duet—Two Nice Fellows, "Drifting and Dreaming" (Ailsyne, Schmidt and Curtis).
9.22: Selection—Band, "Mirella" (Gounod).
9.32: Dialogue—Long and Short Fellows, "Non-sense" (original).
9.38: Humoresque—Band, "Coster's Courtship" (McKenzie).
9.43: A Rustic Dream—Baritone Fellow, "That Old Bush Shanty of Mine" (O'Hagan).
9.47: Selection—Band, "Musical Snapshots" (Trenchard).
9.57: Goodnight—Mellow Fellows, "Old Kentucky Home" (Parks).
10.1: Cornet solo—Sergeant W. Bark, "Roses of Picardy" (Haydn Wood).
10.5: March—Band, "Holyrood" (Alford).
10.9: God Save the King.

3YA CHRISTCHURCH (306 METRES), THURSDAY, JULY 26.

- 3 p.m.: Afternoon session—selected studio items.
4.25: Sports results.
4.30: Close down.
6.0: Children's session—Chuckie and Aunt Pat—stories and birthday rhymes by Chuckie. Songs, Aunt Pat. More "Adventures of Alice in Wonderland". Recitations by Cousins—Jim; "Something Unusual"; "The Frosting Dish."
7.15: News session.
8.0: Chimes.
Scottish vocal programme.
8.1: Overture.
8.8: Baritone solos—Mr. Clive Huddle, (a) "Scottish Emigrant's Farewell" (Hume), (b) "John Grumble" (arrgd. Moffatt).
8.12: Pianoforte solos—Miss Aileen Warren, (a) "Water Wagtail" ("Oriental Bracket"), (Scott), (b) "Elevation" (Chaminade).
8.16: Soprano solos—Madame Gower-Burns, (a) "Twas Within a Mile" (Scottish), (b) "Annie Laurie" (arrgd. Lehmann).
8.22: Clarinet solo—Mr. S. E. Munday, "Flower Song" (Lange).
8.26: Tenor solos—Mr. Harold Prescott, (a) "Bonny Mary of Argyll" (Nelson), (b) "March of the Cameron Men" (Campbell).
8.31: Instrumental trio—Christchurch Broadcasting Trio, "Allegro Maestoso" (Lalo).
8.41: Contralto solos—Mrs. Ann Harper, (a) "Ye Banks and Braes" (Scottish), (b) "My Heart is Sair" (Scottish).
8.46: Recital—Mr. H. Instone, "The Spornn of Sandy McGlashin" (MS).
8.51: Flute solo—Mr. W. Hay, "Fantasia" (Powell).
8.56: Soprano and contralto duet—Madame Gower-Burns and Mrs. Ann Harper, "Row Well, My Boatie" (Smith).
9.0: Weather forecast.
9.1: Overture.
9.3: Baritone solos—Mr. Clive Huddle, (a) "The Devil's Awa' With the Exciseman" (Lees), (b) "Border Ballad" (Cowen).
9.11: Pianoforte solos—Miss Aileen Warren, (a) "Idylle Arabe" (Chaminade), (b) "Legende Del Castillo Mors" (Chararri).
9.16: Vocal quartette—Grand Opera Quartet, "Wi a Hundred Pipers" (Arrgd. West).
9.20: Clarinet solos—Mr. S. E. Munday, (a) "Regrets D'Amour" (Bright), (b) "Serenade Elegante" (Hiller).
9.24: Tenor solo—Mr. Harold Prescott, "My Love's She's But a Lassie Yet" (Trdtl. arrgd. Short).
9.28: Instrumental trios—Christchurch Broadcasting Trio, (a) "Afton Water" (Scottish), (b) "Flowers of the Forest" (Scottish).
9.36: Contralto solos—Mrs. Ann Harper, (a) "Callie Herrin" (Trdtl.), (b) "John Anderson, My Jo" (Trdtl.).
9.42: Scottish patter—Mr. H. Instone, "The Smoking Lum" (MS).
9.48: Flute solo—Mr. W. Hay, (a) "Romance" (Cunnington), (b) "The Butterfly" (Kohler).
9.54: Soprano solos—Madame Gower-Burns, (a) "My Ain Folk" (Trdtl.), (b) "Coming Thro' The Rye" (Trdtl.).
10.0: Vocal quartette—Grand Opera Quartet, "And Lang Syne" (Scottish).
God Save the King.

4YA DUNEDIN (463 METRES), THURSDAY, JULY 26.

SILENT DAY.

LOW-priced valve sets are replacing crystal sets as radio grows strongly in interest in Sweden. John B. Osborne, United States consul-general at Stockholm, reports to the Department of Commerce that the number of licensed listeners increased by 23,000 in February. This brings the total to 351,000. The broadcasting station at Linköping has been closed. It was about fifty miles from the high-power station at Kotla, and therefore considered superfluous.

THERE are an enormous number of broadcast listeners who are totally unaware of the utility of the grid-leak. They assume that the leak may be of any value and just placed in the detector circuit as an aid to oscillation. The wise radio home-constructor will always have on hand several values of grid-leaks in order to change them for best results. There is really a definite reason for changing the grid-leak according to whether local or distant reception is required. It is quite a simple matter in most receivers, and only the work of an instant to change one leak for another. It is generally well-known that the higher the resistance value of the grid-leak the more sensitive is the functioning of the detector. Unfortunately, however, the tone quality when the detector valve is responsive to strong signals is inclined to become distorted. Another feature of the high resistance leak is that the tuning of the set is broadened considerably on strong signals. Conversely the strong signal is rendered sharply tuned by the use of a lower value of resistance.

THE broadcast listener who is using his short-wave "converter" for the first time frequently finds there are one or more points on the dial at which the receiver cannot be made to oscillate. This phenomenon, which is familiar to all amateurs, results from the fact that the receiver is tuned to the resonant frequency of the aerial or to a harmonic of this frequency. When the two are resonant considerable power is absorbed by the aerial, which makes it difficult to produce oscillations in the receiver. This trouble is never encountered at ordinary broadcast frequencies because a very small "aperiodic" primary is used and the natural frequency of the aerial circuit is very high. The trouble may be remedied either by loosening the aerial coupling or by connecting a small series capacity in the aerial which will shift the resonant frequency to some part of the band which is not in use.

AN anxious listener showed me an anonymous letter he received the other day which has somewhat bewildered him. It reads—"Unless you stop your wretched set from howling the whole night you will find your aerial chopped down." The owner of the alleged "wretched set" uses only a crystal outfit! Will the writer of the anonymous letter please note?

THE owners of the Johannesburg broadcasting station are 100 per cent. optimists. A letter has been received in Wellington inviting listeners to listen-in to their daylight reports of the All Blacks v. Springboks football matches. Their station employs an aerial power of 1250 watts and the wave-length is in the 400 metres band. They also state that they have had reports of reception of their station from New Zealand listeners. Well, that's too bad; to think that some of our listeners have been picking up the Johannesburg station and have never let us know about it. Our own modesty could not compare with this sort of thing.

THIS reminds one of an up-country listener who used to brag about receiving a certain mosquito-like distant Australian broadcast station. A dear friend wrote across to the director of the said station to check up on the other man's reception. A reply came back that the station had been closed down for over a year!

NATURALLY mistakes in call letters will occur at times, but in a case in which a 10-watt station is believed to be heard over 1500 miles on the ordinary broadcast wavelength band it would be more discreet for the listener to check up with the station director, by letter, before claiming any prodigious feat.

A FRIEND buttonholed me the other day and unburdened his soul as follows: "I want your advice about my set. Every time I point my loudspeaker towards it a loud moaning howl comes out of the speaker. What do you advise me to do?" An easy cure was not to point the speaker towards the set, but I did not pull this on him. The trouble was due to the super-sensitivity of his detector valve, which was affected by the sound-waves from his loudspeaker impinging on the glass bulb of the valve. A cure suggested, and which proved successful, was the placing of a piece of an old inner rubber bicycle tire as a sleeve over the detector valve.

APART from the risk of breaking them, headphones should never be dropped or subjected to a severe knock. The jar weakens the sensitivity of the magnets within the phones.

Friday, July 27

1YA, AUCKLAND (333 METRES), FRIDAY, JULY 27.

- 3 p.m.: Afternoon session—Selected studio items.
4.0: Literary selection by the Announcer.
4.8: Further studio items.
4.25: Sports results.
4.30: Close down.
6.0: Children's hour, conducted by Nod, assisted by Maori girls from Queen Victoria School. Maori speech of welcome. Choruses. Letters and birthdays. Maori songs. Bedtime stories. Poi songs.
7.15: News and market reports.
8.0: Chimes.
8.1: Relay of overture from Strand Theatre Orchestra, under the direction of Miss Eve Bentley.
8.11: Vocal quartet—The St. Andrew's Quartet, "See How the Fates," from "Mikado" (Sullivan).
8.15: Instrumental trio—The Auckland Trio, "Novellette" (Gade).
8.24: Contralto solo—Miss Phyllis Gribbin, "The Enchantress" (Hatton).
8.29: Hawaiian guitar—"Waters of Waikiki" (Ferara).
8.33: Tenor solo—Mr. Robert Peter, "Farewell in the Desert" (Adams).
8.38: Cello solo—Miss Molly Wright, "Symphonie Variations" (Boellmann).
8.43: Vocal quartet—The St. Andrew's Quartet, "Cradle Song" (Brams).
8.47: One-act comedy—Auckland Comedy Players, under the direction of Mr. J. E. Montague, "A Perfect Pair."
9.7: Weather forecast.
9.8: Relay of entracte from Strand Theatre Orchestra.
9.18: Vocal quartet—The St. Andrew's Quartet, "Music, When Soft Voices" (Bantock).
9.22: Hawaiian quartet—"Isle of Oahu" (Ferara).
9.26: Soprano solo—Madame Richards, "An Irish Folk Song" (Foote).
9.30: Elocutionary—Mr. J. E. Montague, "Off and On."
9.36: Accordion—(a) "Intermezzo" from "Cavalleria Rusticana" (Mascagni); (b) "Egypto, Oriental Overture."
9.43: Bass solo—Mr. Arthur Colledge, "The Sentinel" (Oliver).
9.47: Instrumental trio—The Auckland Trio, "Serenade" (Widor).
9.56: Vocal quartet—The St. Andrew's Quartet, "Finale" from "Mikado" (Sullivan).
10.0: God Save the King.

2YA, WELLINGTON (420 METRES), FRIDAY, JULY 27.

- 3 p.m.: Chimes of the G.P.O. clock.
3.1: Selected gramophone items.
4.30 and 4.55: Sports results to hand.
5.0: Close down.
6.0: Children's session—Uncle Ernest, assisted by pupils of Miss Myrtle Lee. Piano duet, Cousins Nola and Dorothy B., "Romanza" (Diabelli). Chorus, cousins, "Bye Lo" (Gardner). Story, Uncle Ernest. Musical monologue, Cousin Nola, "My Grandma" (Gabriel). Birthdays, Piano duet, Cousins Connie and Joan, "Reverie" (Engelman). Recitation, Cousin Dorothy L., "The Piglets and the Garden" (Ashley). Story, Musical monologue, Cousin Dorothy, "The Two Dolls" (Gabriel). Piano duet, Cousins Nola and Dorothy, "March" (Diabelli).
7.0: News session, market reports, and sports results.
7.40: Lecture—Mr. E. P. Crowther, "A Royal Hobby."
8.0: Chimes of the G.P.O. clock.

An Operatic and Literary Evening.

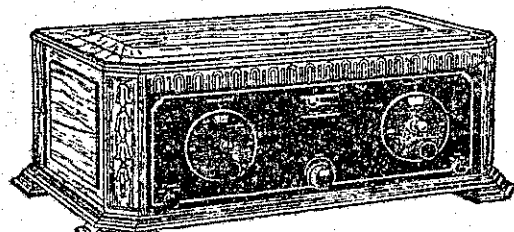
- 8.1: Overture—The Orchestra, "Suite Algerienne" (Saint-Saens), (a) "Evening Reverie"; (b) "Military March."
8.9: Vocal trio—Etude trio, "Angelus" from "Maritana" (Wallace).
8.13: Soprano solo—Miss Gretta Stark, "Here's to Love and Laughter," from "The Sunshine Girl" (Rubens).
8.17: Instrumental trio—Symons-Ellwood-Short Trio, "Episodes" (Schutt).
8.27: Vocal duet—Messrs. Ray Kemp and Frank Skinner, "Qui Vive" (Planquette).
8.31: Fantasia—The Orchestra, "Star of Eve" (Wagner, arr. Bellingham). (Soloist, Mr. Geo. Ellwood).
8.37: Humour—Mr. Vernon Oswin, "The Grimble and the Gwad" (Dennis).
8.43: Tenor solo—Mr. Frank Skinner, "The Faery Song," from "The Immortal Hour" (Boughton).
8.47: Instrumental—The Orchestra—Repeat number.
8.59: Weather forecast.
9.1: Baritone solos—Mr. Ray Kemp, (a) "On the Road to Mandalay" (Speaks); (b) "Follow Me One" (Higgs). (The words of these songs are by Rudyard Kipling, whose works will form the subject of our literary talk to-night).
9.9: Literary talk—Mrs. R. S. Watson, B.A., "Kipling and His Works."
9.29: Instrumental—The Orchestra, (a) "The Recessional" (Kipling); (b) "Danse of the Hours" (Ponchielli).
9.37: Vocal duet—Misses Gretta Stark and Rita Arnold, "Barcarolle," from "Tales of Hoffman" (Offenbach).
9.41: Humour—Mr. Vernon Oswin, (a) "Lord Lundy" (Belloc); (b) "Breakfast" (Graham).
9.47: Contralto solo—Miss Rita Arnold, "Fat Lil' Feller" (Gordon).
9.51: Vocal quartet—Etude Quartet, "Soft and Low," from "The Mock Doctor" (Gounod).
9.54: Instrumental—The Orchestra, "Lilac Time," Part II (Schubert-Clutsum).
10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES), FRIDAY, JULY 27.

- 3 p.m.: Afternoon session—Selected studio items.
4.25: Sports results.
4.30: Close down.
6.0: Children's session, conducted by Big Brother. Talk by Big Brother. Piano duet, Cousins Isabel and Alma, "Norwegian Dance." Story for the tiny tots. Cello solo, Cousin Lola, "Tarantelle." Orchestral items by pupils of Ferry Road Convent, "Faithful and Bold" and "Iris." Violin solo, Cousin Albert, "Bob o' Link." Birthday greetings. Part-song by Convent pupils, "Swanee River." Story by Big Brother. Cello solo, Cousin Marjorie, "In a Monastery Garden." Piano solo, Cousin Natalie, "Butterfly." Vocal trio, Cousins A. McGrath, Eileen and Kathleen, "Lullaby."
7.15: News session.

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Programmes Continued

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7.30: Sports review by Mr. J. K. Moloney.

8.0: Chimes.

8.1: Overture.

Excerpts from Flotow's "Martha" will be presented by the Melodious Four.

8.8: Vocal quartet—Melodious Four, "O'er Her Cheek" (Flotow).

8.12: Cornet solo—Mr. S. J. Creagh, "Star of England" (Brewer).

8.16: Vocal trio—Melodious Trio, "Fair Lady" (Flotow).

8.20: Cello solo—Mr. Harold Beck, "Second Berceuse" (Renard).

8.24: Tenor and bass duet—Melodious Duo, "Gracious Heaven! What a Bustle" (Flotow).

8.28: Instrumental trio—Christchurch Broadcasting Trio, "Allegro Appassionata" (Mendelssohn).

8.38: Vocal quartet—Melodious Four, "See! See! Note His Looks Admiring" (Flotow).

8.42: Recitals—Philosophy and humour, Mr. Hiram Dunford, (a) "The Seven Ages of Man," from "As You Like It" (Shakespeare); (b) "Only a Pin" (MS.).

8.50: Soprano and tenor duet—Miss Frances Hamerton and Mr. Russell Summer (soloist, Miss Frances Hamerton), (a) "From His Eyes Soft Glances Beaming" (Flotow); (b) "The Last Rose of Summer" (Flotow).

8.54: Cornet solo—Mrs. S. J. Creagh, "Miranda" (Code).

8.59: Vocal quartet—Melodious Four, "Oh, What Can Be Her Meaning?" (Flotow).

9.3: Weather forecast.

9.5: Overture.

9.9: Contralto solo—Miss Belle Renant, "Dart on Dart" (Flotow).

9.13: Cello solo—Mr. Harold Beck, Air—"In the Olden Style" (Marie).

9.17: Vocal quartet—Melodious Four, "Haste We" (Flotow).

9.21: Pianoforte novelties—Mr. Ivan Perrin, "Improvisations" (own arrangement).

9.26: Tenor solo—Mr. Russell Summer, "None so Rare" (Flotow).

9.30: Instrumental trios—Christchurch Broadcasting Trio, (a) "Hymn to the Sun" (Rimsky-Korsakov); (b) "Serenade" (Drdla).

9.40: Recital—Mr. Hiram Dunford, "Rubenstein's Playing" (Anon.).

9.45: Contralto and bass duet—Miss Belle Renant and Mr. T. E. Williams, "Yes! But How Bring Him Over?" (Flotow).

9.49: Piano novelties—Mr. Ivan Perrin, "Extemporisations" (own arrangement).

9.56: Vocal quartet—Melodious Four, "Table, Chairs in Order Setting" (Flotow).

God Save the King.

4YA, DUNEDIN (463 METRES), FRIDAY, JULY 27.

3 p.m.: Town Hall chimes.

3.1: Gramophone concert.

3.15: Talk on "Fashions," by a representative of the D.I.C.

3.30: Afternoon-tea music from the Savoy.

3.45: Studio music.

4.0: Music from the Savoy.

4.15: Gramophone music.

4.25: Sports results.

4.30: Close down.

6.0: Town Hall chimes.

6.1: Children's hour—Aunt Sheila and Big Brother Bill. The musical part of this programme will be provided by the massed companies of the Anderson's Bay Girl Guides.

7.15: News session.

7.30: Book reviews, by Mr. H. Greenwood, Librarian of the Dunedin Athenaeum.

8.0: Town Hall chimes.

8.1: Overture.

8.10: Bass solos—Mr. Neil Black, (a) "The River of Years" (Margerto); (b) "To a Miniature" (Brahe).

8.17: Flute solo—Mr. Chas. E. Gibbons, "La Fille du Regiment" (Donizetti).

8.23: Contralto solo—Miss Dorothy Skinner, "Oh, that We Two Were Maying" (Nevin).

8.26: Cornet solos—Mr. D. J. Robertson, (a) "At Dawn" (Code); (b) "Songs Without Words" (Mendelssohn).

8.34: Piano solo—Mrs. Ernest Drake, L.A.B., "Moonlight Sonata" (Beethoven).

8.39: Bass solo—Mr. Neil Black, "Out on the Deep" (Lohr).

8.43: Flute solo—Mr. Chas. E. Gibbons, "Silvery Sounds" (Howgill).

8.49: Contralto solos—Miss Dorothy Skinner, (a) "Rose Leaves" (Willeby); (b) "Ye'd Better Bide a Wee."

8.55: Cornet solo—Fantasia, Mr. D. J. Robertson, "For-Get-Me-Not" (Hartmann).

8.59: Weather forecast.

9.0: Relay of dance music from the Savoy (Alf. Carey and his Orchestra).

10.0: Close down.

Saturday July 28

1YA, AUCKLAND (333 METRES), SATURDAY, JULY 28.

2.45 p.m.: Relay of Rugby football match at Eden Park. Announcer, Mr. W. J. Meredith.

4.30: Close down.

6.0: Children's hour, conducted by Cinderella. Piano solo, Edna McCarthy, "Waltz" (Gurlitt). Story for tiny tots. Violin solos, Dennis Knight, (a) "Aucassin" and (b) "Nicolette" (Kreisler). Letters and birthdays. Piano, march (Hummell). Games and conundrums. Violin solo, Dennis Knight, "Elfin Dance" (Jenkinson). Story-time.

7.15: News and sports results.

8.0: Chimes.

8.1: Relay of overture from Prince Edward Theatre Orchestra, under Mr. Ern. Beacham.

8.11: Quartet—Lyric Quartet, "Way of the World" (Parkes).

8.15: Wurlitzer organ—"Me and Mr Shadow" (Rose).

8.19: Tenor solo—Mr. H. Richards, "For the Green" (Lohr).

8.23: Vocal and instrumental—The Bohemian Trio, (a) "Mandalay" (Lewis); (b) "When You're Lonely" (Ward).

8.31: Humour—Mr. A. McElwain, some humour.

8.36: Relay from Prince Edward Theatre Orchestra.

8.46: Musical muddle—Lyric Quartet, "Medley."

8.50: Wurlitzer organ—Dainty Miss" (Barnes).

8.54: Tenor solo—Mr. A. Ripley, "Who is Sylvia?" (Schubert).

8.58: Weather forecast.

9.0: Vocal and instrumental—Bohemian Trio, (a) "Breeze" Hanley; (b) "Hawaiian Blues" (Parish).

9.7: Bass solo—Mr. E. Thomas, "Gentlemen, the King" (Gleeson).

9.11: Quartet—Lyric Quartet, "Eileen Aicannah" (Smith).

9.15: Relay of dance music from Dixieland Cabaret, under Mr. Harry Neilson.

11.0: God Save the King.

2YA, WELLINGTON (420 METRES), SATURDAY, JULY 28.

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

3.1: Relay description of football match from Athletic Park.

6.0: Children's session—Aunt Gwen and Uncle Toby. Nursery rhymes. Story, Aunt Gwen. Violin solo, Uncle Toby. Birthdays. Musical monologue, Aunt Gwen. Song, Uncle Toby. Mouth-organ, Uncle Toby. Story, Aunt Gwen. Good-night song.

7.0: News session, market reports, and sports results.

7.40: Lecture—Dr. I. L. G. Sutherland, "Fear."

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

8.1: Instrumental—The Orchestra, (a) march, "Marche Militaire" (Schubert); (b) waltz, "Il Bacio" (Arditi).

8.9: Vocal quartet—Melodie Four, "Lovely Night" (Chwata).

8.13: Mandola solos—Mr. Lad Haywood, (a) "Mamma's Gone Away" (Grey); (b) "I'm a-longing for You" (Hathway).

8.40: Hits and harmonies—Glad Idlers, "Who's Wonderful, Who's Marvellous" (Pollack).

8.24: Jazz piano novelty, "Ain't that a Grand and Glorious Feeling?"

8.20: Humour—Mr. Geo. Titchener, humorous anecdotes (original).

8.36: Instrumental—The Orchestra, (a) "Russian Cradle Song" (Kreln); (b) "Vision of Salome" (Lampa).

8.44: Tenor solo—Mr. Sam. Duncan, "La Donna Mobile" (Verdi).

A KARORI listener, a newspaper man, receives 2YA Wellington quite agreeably audible from his loud-speaker using only a crystal receiving set. He has 30ft. galvanised iron pipe masts and a water-pipe earth.

THE arrival on the New Zealand market of Australian-built A.C. valve sets and electrified sets has caused a bit of a sensation in trade circles. "Switch" has seen these lines, and they certainly have the finished appearance of the highest class sets yet imported from anywhere. The components are a revelation in design and workmanship. All the components are of British manufacture, nearly all being made in Australia.

SEEMS as though our brothers across the Tasman are showing the Home manufacturers that the New Zealand demand is not beneath contempt. The Australian-manufactured sets are completely suited to New Zealand conditions, and this is where the Home trade has failed to rise to the occasion. Hence the way the American sets have swept the New Zealand market in the past.

A WELLINGTON trader informs me that as soon as he lands the high-priced American exponential loudspeakers they are sold right out. The New Zealanders have been quick to realise the wonderful tone and volume of the exponential loudspeakers.

A BATCH of American exponential loudspeakers lately landed in New Zealand were found to be badly broken in transit. The insurance failed to cover the actual loss to the importer. This should act as a warning to listeners who are thinking about importing their own exponentials. This is not by any means the first shipment of exponentials which has been landed in a broken condition.

SOMEONE played a funny trick on Marconi's (London) the other day. Apparently quite in the ordinary way of business a person telephoned to their Central Radio office asking for a messenger to be sent to a city address to collect a radiogram. The messenger on arrival found the place locked, bolted and barred. Raised Cain with the bell, and succeeded in raising the janitor also. Explained his errand, and was admitted. Toddled up to the office of the firm he was after—and found a locked-in clerk, who expressed his gratitude for his release. That clerk should go far!

THE electric hair-clippers now used by several New Zealand barbers are a possible cause of interference with radio reception by listeners in proximity to such hairdressers' saloons. A Melbourne radio editor recently received the following query:—"I am living in a locality where there is a barber's shop at which place are used electric clippers, and every time they are used there is a continuous buzz which drowns even the loudest signals. Is there any way of cutting out this row?" The editor replied: "The interference might possibly be prevented at its source. An adjustment to the mechanism of the clippers might be necessary in conjunction with the r.f. chokes necessary to prevent the interference from feeding back into the power lines."

DON'T use long leads from an indoor loop aerial to the set. An Australian experimenter states: "To test out whether shortening the leads connecting my loop to my set would increase selectivity and assist me in bringing in outside stations through the local barrage, I cut down the leads gradually, and finding improvement, finally cut off the base of the loop and fastened it to the cabinet so that now the wiring of the loop is attached directly to the loop posts on the set, and there are no leads at all. The result is very gratifying. The selectivity is wonderfully improved."

ONE clock to beat time for the world is the remarkable proposal of Professor Arthur Korn, noted German inventor of a radio picture transmitting process. From some central observatory its ticks would be broadcast instantly by radio to the whole civilised world, giving a single, accurate time. Through such a plan, advocated by Dr. Albert Einstein and other world-famous savants, clocks throughout the world would be brought to agreement as close as one one hundred-thousandth of a second. Elaborate plans of Professor Korn include the use of television devices to synchronise the earth's clocks with the master time-piece. At present each country sets its clocks from its own national astronomical observatory, by radio and telegraph; and between clocks of various countries, Professor Korn points out, there is often a discrepancy of a fifth of a second. To the layman this is unimportant; but astronomers and others need a universal time.

HERE is a question an Australian radio editor recently received:—"Is there any firm in Melbourne or Sydney which repairs blown-out valves? I have some which have only done little work." The editor replied: "We know of no such firm. In any case, the cost of repairing the tubes would probably be more than one would pay for the tube itself."

8.48: Mouth-organ solos—Mr. Bernie Lee, (a) "Colonel Bogey March" (Alford); (b) "O Sole Mio" (Di Capua).

8.53: Vocal quartet—Melodie Four, "Simple Simon."

8.57: Instrumental—The Orchestra, repeat number.

9.5: Weather forecast.

9.7: Baritone solos—Mr. R. S. Allwright, (a) "The Garden Where My Soul Was Born" (Clarke); (b) "Down the Shallow River" (Clarke).

9.14: Mandola solos—Mr. Lad Haywood, (a) "Sally Horner" (traditional); (b) "When You Are Truly Mine" (Lee).

9.21: Hits and harmonies—Glad Idlers, "Well, I Mean to Say" (MS.).

9.28: Mouth-organ solos—Mr. Bernie Lee, (a) "Stars and Stripes March" (Souza); (b) "Medley of Popular Melodies."

9.33: Humour—Mr. Geo. Titchener, "Hebrew Stories."

9.40: Tenor solo—Mr. Frank Bryant, "Bird Songs at Eventide" (Coates).

9.44: Instrumental—The Orchestra, "Somewhere a Voice is Calling" (Tate).

9.52: Bass solo—Mr. W. W. Marshall, "The Pirate Bold" (Slater).

9.56: Vocal quartet—Melodie Four, "Lullaby" (Brahms).

10.0: Dance programme with vocal choruses by the Glad Idlers.

11.0: Close down.

3YA, CHRISTCHURCH (306 METRES)—SATURDAY, JULY 28.

2.45 p.m.: Relay description of Rugby football match from Lancaster Park.

6.0: Children's session—Stories and greetings by Uncle Sam. Songs and music by Aunt May, "The Story of Little Mozart."

7.15: News session.

7.30: Sports results.

8.0: Chimes.

8.1: Overture.

8.6: Plantation chorus (negro)—Avonian Minstrels, "Way Down Dar in Tennessee" (Scott Gatty).

8.10: Mouth-organ solos—Mr. Alfred Tohill, (a) "Kilmarney" (MS.); (b) "Mr. Gallagher and Mr. Sheen" (MS.).

8.15: Popular song—Mr. Douglas Clapperton, "Just Like a Butterfly" (Wood).

8.19: Banjo mandolin solos—Mr. Stan Birch, (a) "Il Bacio" (Arditi); (b) "Don't Say Aloha When I Go" (MS.).

8.25: Soprano solos—Miss Gladys Brooks, (a) "The Youth" (Ditson); (b) "Go Down to Kew" (Peel).

8.29: Instrumental trios—Christchurch Broadcasting Trio, (a) "Cavatina" (Raff); (b) "Midnette" (Marling).

8.38: Recital—Miss Naare Hooper, "Von Munt's Notes" (told by a French Maid), (Bradshaw).

8.42: Contralto solos—Miss Agnes Richardson, (a) "The Night Nursery" (Arundale); (b) "By the Blue River" (Clarke).

8.47: English concertina solos—Mr. E. W. Heald, (a) "Strolling Home Together, Boys" (own composition); (b) "The Sunshine of Your Smile" (Ray).

8.52: Operatic duet (tenor and bass)—Messrs. E. Rogers and F. Filer, "The Moon Has Raised Her Lamp Above" (Benedict).

8.56: Negro plantation chorus—Avonian Minstrels, "Who Did?" (Scott Gatty).

9.0: Weather forecast.

9.2: Overture.

9.6: Tenor solo—Mr. Ernest Rogers, "Trusting Eyes" (Gartner).

9.10: Mouth-organ solos—Mr. Alfred Tohill, (a) "Don't You Remember the Time" (MS.); (b) "The Prisoner's Release" (MS.).

9.15: Vocal quartet—Avonian Minstrels, "Our Castle of Dreams" (Seeley).

9.19: Banjo mandolin solos—Mr. Stan Birch, "William Tell" (Rossini).

9.27: Soprano solos—Miss Gladys Brooks, (a) "Go Not, Happy Day" (Bridge); (b) "Happy Song" (Del Riego).

9.32: Instrumental trios—Christchurch Broadcasting Trio, (a) "Serenade" (Pache); (b) "Blue Danube Waltz" (Strauss).

9.40: Recitals—Miss Naare Hooper, (a) "School for Scandal" (Sheridan); (b) "Matilda" (Belloc).

9.46: Contralto solos—Miss Agnes Richardson, (a) "The Garden Where My Soul Was Born" (Clarke); (b) "For the Green" (Lohr).

9.51: English concertina solos—Mr. E. W. Heald, medley of the following: "Three O'Clock in the Morning," "Horsey, Keep Your Tail Up," "Last Night on the Back Porch" (MS.).

9.56: Bass solo, followed by Negro Plantation chorus—Mr. Jas. Filer and Avonian Minstrels, (a) "The Trumpeter" (Dix); (b) "Far Away Ober Dere" (Scott Gatty).

Dance music until 11 o'clock.

God Save the King.

4YA, DUNEDIN (463 METRES)—SATURDAY, JULY 28.

2.45 p.m.: Relay of description of senior Rugby football match from Carisbrook Ground.

4.30: Close down.

7.15: News session.

7.30: Address under the auspices of the Workers' Educational Association.

8.0: Town Hall chimes.

8.1: Orchestral music.

8.11: Soprano solos—Miss Agnes Guy, (a) "Dream Merchandise" (Bantock); (b) "Summer Storm" (Lehmann).

8.18: Instrumental trio (violin, cello and piano)—"Hungarian Dance No. 6" (Brahms).

8.23: Baritone solo—Mr. Arthur Lungley, "Four By the Clock" (Mallinson).

8.25: Recital—Miss Molly Gallagher, F.T.C.L., "Making Reuben Propose" (Anon.).

8.30: Contralto solos—Miss Irene Horniblow, L.R.A.M., (a) "It's Only a Tiny Garden" (Woods); (b) "The Land of the Sky Blue Water" (Cadman).

8.36: Violin solos—Mr. Harold Riddle, L.T.C.L., (a) "Broken Melody" (Van Biene); (b) "Traumerei" (Schumann).

8.41: Bass solo—Mr. J. Ferguson, "Odds and Ends" (Drummond).

8.44: Cello solo—Mr. P. J. Palmer, "La Cinquantaine" (Squire).

8.50: Piano solos—Mrs. Ernest Drake, L.A.B., "Prelude" (Scriabine); (b) "Valse in C Sharp Minor" (Chopin).

8.56: Weather forecast.

8.59: Orchestral music.

9.12: Soprano solo—Miss Agnes Guy, "The Pearl" (Carse).

9.15: Instrumental trios (violin, cello and piano)—(a) "Warum?" (Schumann); (b) "Moment Musical" (Schubert).

9.25: Baritone solos—Mr. Arthur Lungley, (a) "When the Dew is Falling" (Schneider); (b) "Trade Winds" (Keel).

9.31: Recitals—Miss Molly Gallagher, (a) scene from "The School for Scandal" (Sheridan); (b) "How to Ask and How to Accept" (Lover).

9.38: Contralto solo—Miss Irene Horniblow, "Wait" (d'Hardelot).

9.41: Violin solo—Mr. Harold Riddle, "Serenade" (Drdla).

9.46: Bass solos—Mr. J. Ferguson, (a) "Life" (Blumenthal); (b) "In An Old-Fashioned Town" (Drummond).

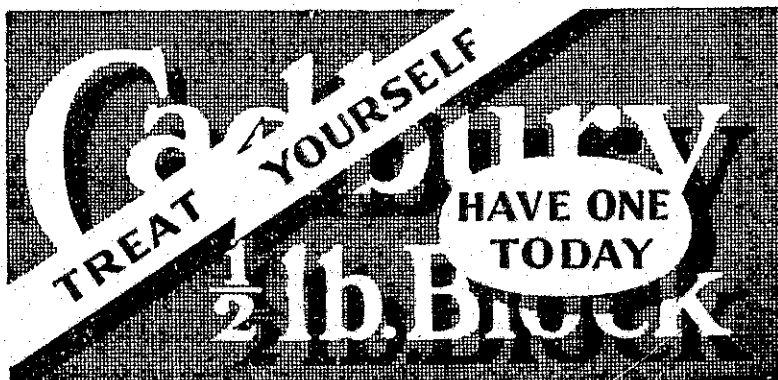
9.52: Cello solo—Mr. P. J. Palmer, "Canzonetta" (Squire).

9.56: Orchestral music.

10.0: Close down.

The above programme is subject to alteration, for during the evening there will be a broadcast description of the Griffiths-Barber boxing match. Announcer, Mr. Divers.

(Continued on page 14.)



The "Colvern" Centre-tapped Crystal Receiver

A Set That Will Suit Everyone

(By Megohm)

THE ever-popular crystal is always acceptable to a large section of the listening public, and even valve-set owners find that they can get a pleasant change by listening-in with a crystal whilst the local station is on the air. The owner of a not very efficient valve set, listening to crystal reproduction, is struck by the fine quality generally, and the faithful reproduction of bass notes, however low in the scale—many notes that are suppressed in the average valve set.

This set can be made in a small and handy size not exceeding 6 by 7 inches, and may be used with a minimum of trouble if a carborundum permanent crystal is employed as the rectifier of signals. For distant reception some constructors will prefer to use a cat's-whisker-galena detector. In such a case the detector should be placed outside the front panel for ease of manipulation.

AERIAL DISPENSED (WITH).

IN or near the main centres, listeners with electric light in the house may use the lighting mains instead of an aerial of any kind. This is done by purchasing a "Ducon" or "Antenna" connection made for the purpose. This is quite a small piece of apparatus that may be obtained at the dealers, and no objection to its use is made by the authorities. It must be clearly understood that no electric current whatever is consumed, as the construction will not let any pass through. But by means of suitable condensers there is a path for the high-frequency aerial current picked up by the overhead lighting wires. A two-way lamp-holder can be purchased for about 5s. 6d., enabling the attachment to be used without interfering with the use of the lamp. One terminal of the Ducon connects to the aerial terminal of set, and the other to the earth terminal, a piece of twin plex being used, though in the case of weak signals an improvement might be made by untwisting the two wires to allow them to separate. The Ducon is tried both ways round in the socket to determine which position gives the best reception. An advantage of this system is that the receiver can be used in any room with a minimum of trouble, a convenience for those who retire early and like listening-in whilst in bed. The receiver may of course be attached to an aerial and earth in the usual way.

A NEAT appearance is given to the coil by making it upon one of the handy "Colvern" formers that can be purchased. These coils, obtainable in two sizes, are

more often used in valve sets, but serve well for this receiver as shown, though any other kind of former may be used. The small size of Colvern former is 2½ in. in diameter, and gives a winding space of 2½ inches. Upon this are wound 52 turns of 22's s.w.g. double cotton-covered wire, and when the 26th turn is reached a tap is soldered on, passed through a hole drilled in the former, twisted round pin No. 2, and soldered. In the view of wiring, a hole is drilled at K, the end of the wire passed through from outside, down through hole in lower end, and soldered to pin No. 4 after cleaning the

careful that the soldered joints are good, and not an insulated joint in which the wire is only held by rosin.

TO suit the varied purposes for which these coil formers can be used, six pins are provided, but only three will be used, Nos. 1, 2, and 4. A coil base into which the B coil plugs may be used for the sake of neatness, or the wires from the coil may be left sufficiently long to continue to their respective connections, 4 to earth, 'phones and moving (M) plates of condenser, 1 to aerial terminal and fixed (F) plates of condenser, and 2 to crystal. If the base is used, the three connections are soldered to the numbered tags as indicated. The base is secured to the baseboard by two brass screws an inch long, and not thicker than No. 5 (G and H).

PANEL AND BASEBOARD.

THE panel may be of 3-16 ebonite, and if it is desired to make the case as small as possible, should be determined as to size after purchasing the condenser and 3in. dial. The dial should be centrally placed on the panel in relation to the sides, and as most condensers occupy more space on one side than the other, this should be taken into account. Measure condenser space with the moving plates in an upright position to give the height of space for free working. When purchasing the condenser be careful to note that the dial fits the spindle, and that the figures read the correct way, clock-wise or anti-clock.

The total height of coil and base is 3½ inches.

The baseboard should be made of 3-8 in. rimu, strengthened by a couple of 1in. strips of the same material screwed underneath as shown. The back strip is made 3in. short at each end, to allow for the base sliding into its cabinet on strips secured to the sides. Three-ply makes a suitable cover, size according to dimensions of panel and baseboard. Shellac dissolved in methylated spirits and rubbed on with a cotton rag gives a good finish to the woodwork with very little labour, which is well repaid by the appearance.

WIRING UP.

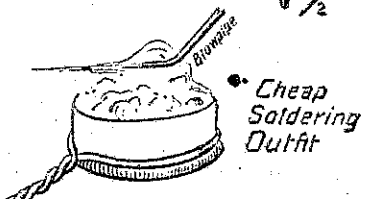
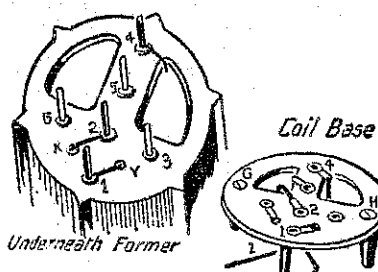
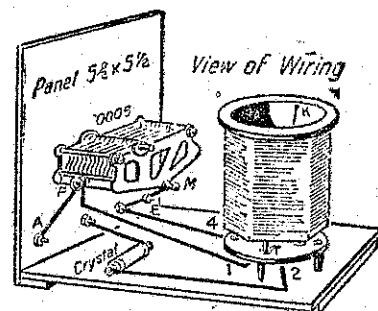
THE wiring is clearly shown in the view of wiring. The 22's wire may be used. The leads running to respective sockets on coil base are numbered accordingly. The wire from No. 1 goes round fixed plate terminal of condenser, and without cutting, continues to aerial terminal. The wire from No. 4 goes similarly without cutting to 'phone, earth, terminal, and

moving plate terminal of condenser. Other end of crystal connects to remaining 'phone terminal.

Carefully clean wires at all points of connection with a small piece of glass-paper.

Resin-cored solder should be used for soldering coil connections. The cheapest soldering outfit for small work is a mouth blow-pipe, which can be purchased for about 1s., and the lid of a metal (Colgate) shaving-soap container. A piece of stiff wire can be put round this and the two ends twisted together to form a handle. Place a tuft of cotton-wool in the lid, soak with methylated spirits, and ignite. With the blowpipe in the mouth, the flame is directed upon the soldered

joint. If working on ebonite or bakelite, it must be protected from the flame by a piece of cardboard with a hole cut in through which the metal tag may be soldered to.



AS A WAVE TRAP.

THE receiver may be used as a wave-trap on a valve set by connecting aerial to A and E to aerial terminal of valve set. By means of a condenser the unwanted station is then tuned out. Great selectivity will be added to the receiver by its use. No connection is then required to the telephone terminals, but if the crystal is short-circuited by a piece of wire, the right-hand 'phone terminal then provides an alternative connection for the aerial, which might suit some locations better.

Any constructor desiring to listen-in to morse transmissions on 600 metres could do so by winding a separate former of the large size with 80 turns of 20's s.w.g. enamelled wire, tapping at the fortieth turn. The three connections to be made to the same numbered pins. All that is then required to change from broadcast to 600 metres would be to simply change the coils, as both sizes fit the same base.

PARTS REQUIRED.

Variable condenser, .005	12 0
Dial, 3in.	1 3
Colvern former and base	6 0
Carborundum fixed crystal ..	7 6
Ebonite panel (say)	3 0
22's s.w.g. d.c.c. wire	1 6
4 terminals (2 'phone)	1 6
Baseboard, screws, etc.	2 3
	25 0

IN many localities for some reason it is easier to receive wireless signals over longer distances north and south than when the direction is east and west.

THE Hungarians are contemplating the erection of a station at Budapest with a power far greater than that of any of the British stations.

IN the ordinary plug-in coil, the inner end of the winding is connected to the plug of the coil, and its outer end to the socket.



British
Built
Batteries

Are a guarantee of long service.

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WELLINGTON,
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QUERIES BY CORRESPONDENCE.

1. Every communication enclosing queries is to be addressed to "Megohm," Box 1032, Wellington, and must be accompanied by a stamped addressed envelope for reply by post, otherwise no reply.
2. Questions must be written so that a space is left in which the reply may be added.
3. Queries regarding articles that have appeared in this page will have first attention.
4. Owners of bought receivers and apparatus should communicate with the dealer or agent in case of trouble arising.

OUR INFORMATION SERVICE.

AFTER nearly twelve months of this correspondence department, the writer has come to the conclusion that too much of his valuable time is wasted in replying to trivial questions or attempting to give advice where sufficient particulars have not been supplied. When the necessary details are not given it often means writing out several alternative methods of treatment to suit contingencies, and this takes time. The average owner of a factory-built set is not as a rule competent to undertake repairs and alterations, and in many cases they are only making more work for the radio doctor when he is called in.

For Constructors.

The primary object of this service is to help constructors of receivers and apparatus that have been described in this page, and queries from such readers will always have careful attention. The writer wishes to make more time for experimental construction of apparatus that is constantly being inquired for, and strictness with trivial correspondence will help to secure this.

Stamped Addressed Envelope.

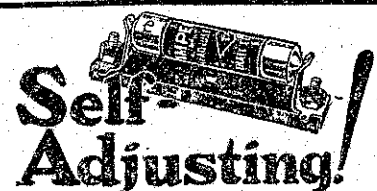
Every mail brings at least one or two queries in which the rule regarding the stamped addressed envelope is ignored. In most cases the missing stamp has been supplied and an envelope addressed, but in future non-inclusion will be looked upon as a good and valid excuse for consigning the letter to the waste-paper basket, so those who have

not read the paper since this rule appeared, or whose conscience does not allow them to provide stamps, will be left wondering when their reply is to arrive. One object of the stamped addressed envelope is the saving of time, which amounts to quite a lot in dealing with several dozen letters in a batch.

A USEFUL INNOVATION

THE British Broadcasting Corporation has now a special van equipped with microphone and amplifier plant with the object of going out to any particular spot where a good "news story" may be given. A connection is then made to a near-by telephone line and the description begins.

SEVERAL hundred ocean-going ships are fitted with the new Marconi auto-alarm apparatus for detecting SOS signals.



For best performance your valves require a variable filament control to supply the definite current they need, despite L.T. battery variations. AMPERITE is the only self-adjusting and automatic filament valve control that does this. Takes the "guess," inconvenience and unsightliness out of panel rheostats. Simplifies wiring, panel design, and tuning. Prolongs valve life. Order by name. Accept nothing else. For sale by all dealers. Prices with mounting.

N.Z. Selling Representatives:
ABEL, SMEETON LTD.
15 Customs Street E., Auckland.

AMPERITE
The "SELF-ADJUSTING" Rheostat

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GRID LEAKS. All Values 3/- Each.

RESISTANCES, wire wound. All values. FROM 6/- Each.

FIXED FILAMENT RESISTORS, all values 1/6 Each.

ANY VALUE OF CONDENSER.

BOSCH ELECTRIC PICK-UPS

SPECIAL FEATURES:

- (I) Light on Records.
- (II) Pure Reproduction.
- (III) Ample Volume.

THOMAS BALLINGER & CO., LTD.,
58-62 VICTORIA STREET, WELLINGTON.

"Where The Quality Goods are Sold."

Construction Continued

ACCUMULATOR CHARGING

IN order to charge an accumulator, it is necessary to pass a current through it in the reverse direction to that in which the current flows when it is lighting the filaments of our valves. The filament current consumption of the average home broadcast receiver is about 1 ampere, and, assuming that we use a six-volt accumulator, we shall thus have a voltage of six driving a 1-ampere filament current through the filaments. Now, the measurement of power in watts is obtained by multiplying the voltage by the current, the formula for power being $W = I \times E$, where W is the power measured in watts, I the current measured in amperes, and E the voltage. It is obvious from this simple equation that if we know the value of any two of the quantities expressed it is easy to find the value of the missing one. Therefore, it is equally true to say that I equals $W \div E$ and E equals $W \div I$.

Maximum Charge and Discharge Rates.

IF our receiver requires a current of 1 ampere, we must choose an accumulator whose normal discharge rate as specified by the maker is not less than this value. For safety we shall probably choose an accumulator which can be discharged at a considerably greater rate without suffering injury; in this manner we shall also gain the advantage of being able to add an extra valve or two to our set without the necessity of purchasing a new accumulator.

Now, the normal discharge rate of any accumulator depends on its ampere-hour capacity, which itself depends upon certain physical characteristics of the accumulator which are fixed by its makers. In general, the greater the ampere-hour capacity of an accumulator the greater its bulk and weight. The normal discharge rate, which is also the normal charging rate, is the maximum safe rate at which the accumulator can be charged or discharged without risk of injury to it; this rate is normally one-tenth of the actual ampere-hour capacity of the accumulator. Thus if we have an accumulator possessing an actual ampere-hour capacity (hereinafter referred to as the A.H.C.) of ten, the rate of discharge must never exceed one ampere.

There is nothing to prevent us from charging or discharging at a lower rate than the normal one. Therefore, we can charge, for instance, by passing a current of 1 ampere through the accumulator for 10 hours, 1 ampere for 20 hours, 1 ampere for 40 hours, etc.; the same rule holds good when discharging. Thus it follows that if we know the total filament current taken by our receiver and the A.H.C. of the accumulator, we can predict with certainty the length of time during which our accumulator will operate our receiver before it requires recharging. The formula for this is T equals $I \div A.H.C.$ where T equals the time expressed in hours, I the current in amperes, and $A.H.C.$ the actual ampere-hour capacity of the accumulator. By using the same formula we shall know exactly how long our accumulator will take to charge if we connect it in series with any apparatus through which a current of given value is flowing. It will be again obvious that if we know any two quantities in the above equation that we can find the third, and that I equals $A.H.C. \div T$ and $A.H.C.$ equals $I \times T$.

Most experimenters are aware that if a low-voltage accumulator, say 6 volts, is re-charged from a high-voltage main, say 230 volts, D.C., by means of resistances, most of the energy drawn from the mains is wasted in the resistance. Of course, if the charging is done in the evening, when the electric lights are on, and the current through the latter is passed also through the accumulators, this is a very efficient, although not always a convenient system.

With alternating-current main supply, however, it is always possible, by means of a transformer, to step-down the voltage to the right value, or thereabouts, when the wastage can be reduced to a small quantity. Some form of rectifier is, however, necessary in this case, so as to pass current through the accumulator in one direction only.

Charging from D.C. mains, when only one battery is dealt with, is a far more expensive process than charging from A.C., on account of the great loss of current dissipated by resistances, and which has to be paid for.

New Accumulators.

A NEW accumulator should not have the acid put in it till just before charging. If it is likely to have only occasional use or indifferent care, 1-10th less decimal point gravity of acid (i.e., 1.19 if 1.20 is recommended) will be safer, and efficiency not noticeably less; 1.18 is not too low.

After one or two charges and discharges some active material from the plates will generally be found in the bottom of the case. This is seen mostly in the corners; and if at any time, either on charge or discharge, or even when not in use, it should touch any two plates, positive and negative, it will probably ruin the whole accumulator.

When seen to have reached a dangerous point it must be got out. This sediment ruins more cells than any other thing. Excessive rate of charge and discharge causes most of it.

Removing Sediment.

DRILL a 3-16in. hole in the corner of the lids of each cell, then take out vents, and empty acid in a clean jar, and let it settle. Rinse out the cells with soft water until all that will dislodge has come out. The small holes you drilled in the corners will perhaps take a knitting needle, and stir up any that has got solid, and will enable you to get out the last bit of dirt. Then put in the cleanest of the acid again, and at once have it charged. Plug the little holes you made with celluloid cement or a rubber plug. Whether there is any dangerous sediment to come out or not, this will often improve the capacity of the accumulator. As to the sympathy of the charging man for your cells, you can only hope for the best.

The top of the accumulator must be kept as free as possible from acid, and the terminals and all metal parts kept coated with vaseline. To ease a sulphated terminal, warm it, and if you have to use pliers, go carefully. Clean it well afterwards, and vaseline.

Final Hints.

DON'T discharge at more than one-tenth of the rated capacity, or even less than this for fairly constant work. And reckon one-tenth of a reputed 40 amp. accumulator as 2 amp., and other sizes accordingly. Exceeding this, except for short periods, is not good for the plates. The same applies to charging. This is why the more valves you use the larger should be the accumulator.

Beware of the acid getting on the clothes. It burns holes at this strength. Liquid ammonia kills it in the cloth, but is worse than the acid itself on the skin. A discharged accumulator standing by is like a dry battery at work. It is eating its inside away.

A broken lug should be burnt on, but it may be soldered, or mended with a brass plate, or threaded brass wire and nuts. In either of these last two cases be sure to coat the mend well with paraffin wax or celluloid cement before replacing. Always keep the dielectric well up, and make up for loss in evaporation only with pure distilled water. Ordinary house tap water may cause peculiar and dangerous sediments and deposits to collect.

Finally, remember always that an accumulator is a chemical and not a mechanical device.

STILL they come! Another static reducer is reported from America. A machine that reduces static noises has been invented by William Scott, band instrument repairer, after twenty years of experimenting. The clariphone, as it is called, is connected to the output of the radio receiver. Valves in the machine reject all noises that are not harmonic signals. A fortune awaits Mr. Scott if his gadget is a success.

GERMAN fans who recently heard so much applause after the renditions of an orchestra from the Langenburg station formed the opinion that the group was performing before an enthusiastic audience. It was only a phonograph record containing the reproduction of a crowd applauding.

ACCUMULATOR CAPACITY INDICATOR

ASSUMING that the acid in a lead accumulator cell is of the correct specific gravity, the terminal voltage of the cell may be taken as an indication of the state of plates; thus a fully-charged cell has an E.M.F. of just over 2 volts, which falls to 1.8 in the discharged condition. A voltmeter may, therefore, be used to indicate the condition of an accumulator, and this principle has been made use of in a new accumulator capacity indicator. The scale, instead of being calibrated in volts, is subdivided into three regions marked "Low," "Medium," and "Full," each band being given a distinctive colour. A simple test revealed that the red or "Low" region covers a range of 1.5 to 1.7, the orange or "medium," 1.7 to 2.4, and the blue or "full," 2.4 to 2.7 volts per cell. The latter range, representing maximum potential, is for use while the battery is on charge, and indicates when the charge should be stopped.

The I.T. type gives ample warning before the filament current runs down, and the I.T. type must be the means of saving many accumulator H.T. batteries from ruin; too often a battery is left in service until signals fade away and three or four complete discharges of this nature are sufficient to damage the small plates beyond repair.

IMPROVING AUDIO QUALITY

QUALITY of reproduction may be marred on the audio side in many different ways. There is distortion, arising from transformers, from badly proportioned resistance coupling, low volume-carrying capacity of the last valve, lack of grid-bias, and last, but not least, low-frequency reaction.

Although the internal resistance of B battery or eliminator may not be so high as to cause an actual howl in a two or three-valve amplifier, there may be distortion caused by reaction due to such internal resistance. A remedy for this trouble, if it is suspected to be present, is to place an extra resistance in the plate supply leads excepting that to the power valve. A 2-mfd. by-pass condenser is placed across each such resistance on the side away from the source of current, and B negative filament common lead.

In a general way, a resistance of 20,000 ohms at least, is recommended, and whilst it may be considered that a great drop in plate voltage would result from its inclusion in the circuit, when an eliminator is in use, the drop need not cause any appreciable drop in volume.

This method will at least prove a good last resort for any tendency to trouble from reaction on the audio side, as it is a practically certain cure. It may also be applied to the detector. The method is also a cure for "motor-boating."

SCREEN GRID ON S.W. ADAPTER

A CORRESPONDENT asks for particulars as to how the screen-grid R.F. unit can be connected to the short-wave adapter. This will be fairly obvious to many, as it means just the same treatment as is given to the detector portion of the short-wave receiver. It would be best to mount the unit and adapter one on board as a complete unit. "Megohm" will look into the matter, and any points of importance will be dealt with next week.

The construction of short-wave receivers and adapters is going apace just now, in preparation for the Tunney-Heeney fight, and the screen-grid unit will be found an invaluable addition. Constructors of adapters are reminded to ascertain which pole of the A battery is "earthed" in their broadcast receiver, and to earth the same in the adapter. In the "Listeners' Guide" diagram A positive is earthed, so if A negative is earthed in the broadcast receiver, it only means in the adapter altering the earth connection from filament positive to filament negative, where shown just above the valve base in diagram. If this point is not attended to it may result in the A battery being short-circuited.

CONNECTING AUDIO TRANSFORMER

ENQUIRY is frequently made as to the way in which a transformer should be connected up when marked IP, IS, etc. Failing any definite directions, it should be connected as follows:—O.P. to plate of previous valve, IP to B positive, O.S. to grid of next valve, and L.S. to negative of grid-bias battery, or if no grid-bias, to the filament battery or terminal marked C positive.

This arrangement is usually correct, but reversals of both primary and secondary should be made in turn if there is any suspicion that everything is not O.K.

The value of the fixed condenser shunted across the primary of the first audio transformer is not often stated by the manufacturers, but is often of importance in a circuit. Its value may be from .0005 to .001 mfd.

RADIO DIRECTORY

What to Buy and Where

AUCKLAND

- ATWATER-KENT RADIO** .. Frank Wiseman, Ltd.
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- ALTONA & HAMMARLUND-ROBERTS SETS.** Johns, Ltd.
Chancery Street, Auckland.
- AMPLION LOUDSPEAKERS** .. All Radio Dealers.
- BREMER-TULLY RADIO** Superadio, Ltd.,
247 Queen Street, Auckland.
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- CE-CO VALVES** All Radio Dealers.
- FADA RADIO** Radio Supplies,
231 Symonds Street, Auckland.
- FEDERAL, MOHAWK, GLOBE** Federal Radio House,
9 Darby Street, Auckland.
- GILFILLAN AND KELLOGG** . Harrington's, Ltd.,
138-140 Queen Street, Auckland.
- GREBE RADIO** Howie's,
Dilworth Building, Custom st., Auckland.
- MARCONI ECONOMY VALVES** All Radio Dealers.
- MULLARD VALVES** All Radio Dealers.
- RADIOLA RECEIVERS** Farmers' Trading Co., Ltd.,
Hobson Street, Auckland.
- RADIOTRON VALVES** All Radio Dealers.
- RELIANCE BATTERIES** Reliance Battery Mfg. Co., Ltd.,
N.Z. Made 56 Albert Street, Auckland.

COUNTRY TOWNS

- CROSLEY ELECTRICAL AND BATTERY MODELS** The Forrest-Crosley Radio Co., Ltd. Cuba Street, Palmerston North.
- CROSLEY RADIO SALES AND SERVICE** D. A. Morrison and Co.
The Avenue, Wanganui.
- FEDERAL AND AIR PATROL RADIO** J. B. McEwan and Co., Ltd.,
New Plymouth.
- GAROD, CROSLEY, RADIO AND ACCESSORIES** The Hector Jones Electrical Co.
King and Queen Streets, Hastings.
- GREBE, CROSLEY AND RADIOLA SERVICE** E. Dixon and Co., Ltd.,
Hawera.
- RADIOLA DEALER AND SERVICE** G. C. Carrad.
140 The Avenue, Wanganui.
- PHILIPS VALVES AND APPARATUS** All Good Radio Dealers,

CUTTING OUT THE DETECTOR TAP

IN order to do away with the unequal drain caused on B batteries by the detector tap, or the extra high resistances required in B eliminators to sufficiently reduce detector voltage, a good plan is to employ a first audio stage of resistance coupling. By this means the B voltage need not be cut down by external resistances, as the coupling resistance will do all that is required.

In such a case a higher resistance than the 100,000 ohms, usually employed may be used, and 2 or 3 megohms will be found to work well and give high amplification with a saving of B current. The coupling condenser between plate and grid may be a half-microfarad, which will efficiently pass the lower audio frequencies. It is also necessary that the grid leak on the first audio tube should be as high as will work without "blocking," which would soon be indicated by distortion or motor-boating.

If this change is made according to the lines indicated, and a high-mu valve used as detector, amplification will be fully as great as that obtained from a transformer, and the gain in quality will depend somewhat upon the type of transformer replaced.

THE International Bible Students' Association arranged for May 30 what is believed will be the greatest radio hook-up to that time in America. More than 100 stations were linked together to hear an address at Albany by Joseph F. Rutherford, president of the organisation. The key station was WBZ, Boston.

RADIO, infant of the arts, is steadily gaining favour in Greece, ancient mother of the arts. Receiving sets imported in the last year were valued at £10,000. Sets manufactured in France lead the list of Greek imports with 105, the United States is second with 47, Germany third with 29, and Great Britain fourth with 19.

THE bullfight as broadcast by Spanish stations is the favourite radio diversion of the large Spanish colony in Paris. Before the fight is heard a talk by the torador, then a description of the weather and of the crowd, and finally the shouting as the fight proceeds and acclamation of the hero of the day.

WHEN one soldered joint has to be made close to another one, a damp rag wrapped round the latter will tend to prevent it becoming heated and unsoldered.

EARTHENWARE jars should not be used as wet-battery containers, as there is much more leakage with these than with glass.

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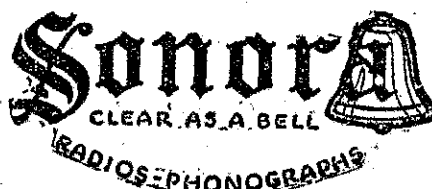
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Programmes Continued

Sunday, July 29

1YA, AUCKLAND (333 METRES), SUNDAY, JULY 29.

3 p.m.: Afternoon session—Selected studio items.
4.0: Literary selection by the Announcer.
4.8: Selected studio items.
4.30: Close down.
6.0: Children's session, conducted by Uncle Leo.
6.55: Relay of service from Church of Christ. Preacher, Mr. E. Aldridge; organist, Mr. Ivan Lambert.
8.30: Relay of municipal organ recital from Town Hall. Organist, Mr. Maughan Barnett.
9.30: God Save the King.

2YA, WELLINGTON (429 METRES), SUNDAY, JULY 29.

9 a.m.: All Blacks' football result.
9.15: Close down.
3 p.m.: Relay from St. Mark's Church of the H service of thanksgiving and remembrance in memory of Elder Brother, Captain E. H. Dillon Bell. The address will be given by Rev. Ernest R. Weeks, and the following ministers will take part in the service:—Rev. H. E. K. Fry, vicar of St. Mark's Church, Rev. G. C. Blathwayt, and Rev. J. R. Blanchard. The ceremony of Light will form part of the service. The choir of St. Mark's Church will also take part in the service. Organist and choirmaster, Mr. Lawrence Watkins.
4.30: Close down.
6.9: Children's session—Sunday service, conducted by Uncle Ernest, assisted by St. Peter's choristers.
6.55: Relay of evening service from St. Thomas's, Anglican Church, Newtown. Preacher, Rev. C. V. Rooke, M.A.; organist and choirmaster, Mr. Wenzel Collier, L.L.C.M.
8.15 (approx.): Relay of band recital of Wellington Municipal Tramways Band from His Majesty's Theatre (conductor, Mr. T. Goodall). God Save the King.

3YA, CHRISTCHURCH (395 METRES), SUNDAY, JULY 29.

9 a.m.: Result of All Blacks' football match in South Africa.
3 p.m.: Afternoon session—Selected studio items.
4.30: Close down.
5.30: Children's song service, conducted by Uncle David. Hymns will be sung by scholars from the Lutheran Sunday School.
6.30: Relay of evening service from Lutheran Church, Worcester Street. Preacher, Rev. H. Bruhn.
8.0: Selected items from 3YA studio.
8.15: Rebroadcast by relay of municipal Tramways Band concert from His Majesty's Theatre, Wellington.
God Save the King.

4YA, DUNEDIN (463 METRES), SUNDAY, JULY 29.

5.30 p.m.: Result of 'All Blacks' match in South Africa.
5.31: Children's song service, conducted by Big Brother Bill.
6.30: Relay of service from Knox Presbyterian Church. Preacher, Rev. Tulloch Yulie, B.D., M.A.; organist, Mr. W. Paget Gale.
8.0: Studio concert.
9.15: Close down.

FEATURES.—(Continued.)

Duncan, Miss Billie Lorraine, and Mr. Billy Gay. Piano-accordion and marimba solos and duets will be played by Messrs. Heaney and Dalziel, there will be novelty piano solos by Mr. T. V. Anson, and humorous items by Mr. Keith Stronach and Major F. H. Lampen. A humorous sketch will be given by Miss Billie Lorraine and Major Lampen.

AN hour's excellent concert will precede the dance session on Friday evening. Contributing will be Miss Dorothy Skinner (contralto) and Mr. Neil Black (bass). Instrumental pieces will be played by Mrs. Ernest Drake (piano), Mr. Charles E. Gibbons

(flute), and Mr. D. J. Robertson (cornet).

AGAIN a first-rate concert will be broadcast on Saturday evening. Miss Irene Hornblow (L.R.A.M.), Miss Agnes Guy, Mr. Arthur Lungey, and Mr. J. Ferguson will be singing. Educational numbers will be contributed by Miss Molly Gallagher, F.T.C.L., whose items will be "Making Reuben Propose," a scene from "The School for Scandal," and "How to ask and how to accept." As a violin solo, Mr. Harold Hiddle will play Van Biene's "Broken Melody" and Dr. R. S. "Serenade." Cello solos will be played by Mr. P. J. Palmer and piano solos by Mrs. R. Drake, while the three instrumentalists will be heard in trio pieces.

Our Short Wave Corner

Mr. F. W. Sellens (Northland) writes:—

In the last number of the "Popular Wireless" (England), the following appears, which was first published in the "Radio Record" several months ago:—

"Keyholing Extraordinary."

"I note the report that a New Zealand listener had the luck to overhear 5W talking to 2XAD, the former on 24 metres and the latter on 21.9 metres. What made the matter unique was that when tuned to either wavelength he could hear both stations, because while one of them was listening to the other on the loudspeaker his own microphone faithfully reproduced the loudspeaker. Glutted as we are with marvels, I think we still have room for a slight thrill at this incident. Think of the whole process, from the moment the first sound was made by the vocal chords of the man at 2XAD till the reproduced voice reached the New Zealand man's ear, via 5W, occupying less time than the blinking of an eye!"

THE station reported at different times as "An Japanese" is just as much a mystery in South Africa as New Zealand, according to an American magazine. "South African listeners have been puzzled recently by a station heard calling 'Hello Japoni' around 32.82 metres. Letters to the "South African Wireless Weekly" suggest it is y be Peking, or the Belgian Congo. However, considerable strength of signal was reported at Cape Town. French conversation on radio matters was heard from this station."

On account of the great success of short-wave relays, most of the famous American broadcasting stations, including KDKA, WGY, WRNY, WLW, WAAM, and WHK are now broadcasting their programmes on short wavelengths as well as upon the ordinary wave-length.

The French are experimenting with short-wave wireless at the bottom of the sea, and tests were recently carried out on a submerged submarine in the Bay of Biscay, good strong signals being picked up by amateurs in England when the vessel was submerged.

For the benefit of the many residents in East Africa, a short-wave station is to be erected at Nairobi.

PULL, Kootwijk, Holland, transmits every Thursday from 1.30 a.m. till 2.30 a.m., New Zealand time.

The Malabar short-wave station, Dutch East Indies, is now broadcasting fairly regularly on Thursdays, Saturdays, and Sundays, from 12.30 a.m. till 3.30 a.m., New Zealand time, on a wave-length of 17.4 metres, with the call sign ANP.

Recent advice from JOAK states that they are testing on 30, 35, 60, and 70 metres.

"Write down —," etc., so often heard from 2XG are intelligibility or word tests in connection with the commercial Transatlantic telephony system run by the American Telephone and Telegram Company.

Within the past few days some trouble was experienced with the smooth oscillation of my set. This, after a little searching, was put right by removing some dust from the variable condenser with a pipe cleaner. It is a good plan to go over the set occasionally and remove all signs of dust; it makes a lot of difference to the results.

The Aurora Australis reported during the past week was probably partly responsible for poor reception recently.

5SW has not been heard for several days. This is confirmed by other listeners.

Saturday, July 7.

There was not any sign of either of the short-wave stations of WGY, which is unusual, either 2XAD or 2XAF having been heard every Saturday afternoon for some months.

KDKA were broadcasting the "Palmolive Hour," usually heard from WGY's studios.

A special programme for Monday was announced. They signed off at 2.30 p.m. Strength about R4.

From 3.30 p.m. till 6.37 p.m., PCJJ put on a special programme for Australia and New Zealand.

As usual many amateurs were called and thanked for reports. This was confined to Australia, New Zealanders not being mentioned this time. Strength was at the start about R3, and fairly evenly decrease to R3-2 at the conclusion. There was slight static and short fading.

RFM was about R5 during the evening, but static spoilt reception.

Sunday, July 8.

2XAF was heard, but something was wrong, as signals were weak and mushy all through, also very unsteady. This was the experience of others in Wellington.

2AC, Wairoa, was testing on 'phone just below 2XAF's wave-length and came in at good strength, at times up to R3.

Other amateurs heard were 2AU, Rangiora (R3); 1FD, Hamilton (R 5-6); and 4NW, Queensland (R 3-4).

Monday, July 9.

3LO was not heard until after 7 a.m., when to me they appeared a little lower on the dial than usual and very weak.

Tuesday, July 10.

The carrier only of 5SW was audible up till 7 a.m. At 7.10 p.m. a band was heard on about 90 metres. A call was given, but was not intelligible. They closed down about 7.15 p.m. Strength R 2-3.

Wednesday, July 11.

PCJJ was about R1 at 5.3 a.m., but from then till after 7 a.m. not a sound was heard. A friend who got them just after they started again heard some mention of apology, so probably they had a breakdown.

From 7.15 a.m. till 7.30 a.m. strength was quite weak, about R3-4. They closed with the Dutch National Anthem at 7.30 a.m.

The only stations heard during the evening were 2BI and 4YA on harmonics, which were more clear and stronger than usual.

Thursday, July 12.

At 10 p.m. an orchestral selection from RFM came through well at about R5, but a Morse station spoilt reception.

Friday, July 13.

PCJJ was very weak, about R2, at 6 a.m. and increased to R6-7 at 7.30 a.m.

Not any announcements were heard. They appeared to be relaying the programme, which consisted of some very fine vocal music, both solo and concerted numbers. Some jazz was heard toward 7.30 a.m.

RFM came in very well after 10 p.m. Plenty of talk, but some fine orchestral selections as well. R5, 2BI and 2AH, both of Wellington, were heard testing on the 80-metre band.

Another Interesting Letter.

THIS last week or so short-wave reception has been very good with me, all stations coming in with good strength. PCJJ, the Dutch station's Saturday afternoon transmissions are a treat to listen to. Their transmission of Saturday, July 7, I listened to right through, their programme consisting of gramophone items, calling Australia and New Zealand, and thanking different ones who have been good enough to send them a report on their transmissions. Mr. Sellens's name I have often heard mentioned. I am looking forward to their relay of the Olympic Games, and trust it will be well received here. I notice 2BI Sydney is also to relay this short-wave event.

On Sunday, July 1, after 2XAF closed down, the short-wave transmitter 2XAQ, of Bamberger and Company, Newark, New Jersey, was heard on approximately 65 metres. Mostly dance music was heard, the announcer stating they were relaying dance music from the Rip Van Winkle Hotel, New York. The volume was not to be compared with 2XAF, but modulation was perfect. This station closed down at 4.3 p.m., New Zealand time. I tried for this stranger again on Sunday, July 7, but the carrier wave was only audible.

The Cincinnati short-wave transmitter, WLW, came in with good strength yesterday afternoon (Sunday), from 3.35 p.m. till 4.30 p.m., Wuritzer organ items being well received, and the programme concluded with dance items from Cato's Vagabonds, at Swiss Gardens, the last item being "I'll Love You a Little Longer." The station announcer gave his time as 12.3 a.m. E.S.T.

We are all looking forward to the Heaney-Tunney championship contest, and by a letter I received a few days ago I think we will have three short-wave stations to choose from, namely, 2XAD, 2XAF, and KDKA, and the time of the big fight will depend on what time the preliminary bouts finish. No doubt first-class information will be

cabled to New Zealand from America in plenty of time.

Station 2XAD has not been heard by me for some time now, but no doubt he will be on the air the day of the fight. The last time I heard KDKA Pittsburg was on June 23, on his usual wave-length, 26 metres, being logged at 1.30 p.m., but his signal being very weak I did not trouble him much.

My experience of the English amateur Gerald Marcuse 2NMI transmissions is that he is always interfered with by a morse station, and find it very difficult to hear anything. I was talking to a friend a few days ago, and he tells me this station is a Jap. beam station, and I think it is a beam transmitter, because it is impossible to read anything.

A few words of praise to the New Zealand amateur transmitters who are on 'phone sometimes with music and speech. I had the pleasure of visiting one of these amateurs a few nights ago, namely, 2BO, Mr. H. C. Dixon, Devon Street, Wellington, and it was most interesting to me to see what some amateurs work with—nothing flash, but they deliver the goods. 2BO is not a great distance from me, but his volume is equal to the strength sometimes of 2YA. The amateur deserves all the praise possible, because it is they who have pushed short-wave transmissions ahead.

I don't want to bring the old short-wave argument up again, but I may state I am one of those knobturners and have been very successful in logging DX short-wave stations, but apart from S.W. listening I am a frequent listener on the broadcast band, extending back to when KGO, Oakland, California, was in its experimental stages being the second in Wellington to hear this famous California station call sign, which at that time was 6XG. Wireless has advanced some since then. From time to time I send reports to the "Radio Record" regarding S.W. stations logged by me (and thank the editor for publishing them), but leave the S.W. corner to Mr. Sellens, the weekly correspondent, and must say his information is of great benefit to the S.W. listeners.—A. P. Morrison (Brooklyn).

P.S.—The 40-meter station RSR, Germany, I heard on three mornings of last week, but he is like RFM, Russia—it is mostly talk with him, although one morning I heard two items of music.

A NEW WET BATTERY

The invention, reported from Europe, of a new type of accumulator battery, differing in important respects from existing types of storage batteries, is likely to have an important influence on wireless reception, and to prove a serious rival to the new "all electric" wireless receivers which operate directly from domestic electric supply mains. The chief features of the new storage battery are that it is less bulky, and much lighter than lead, or iron and nickel type of batteries, and that its capacity, or the amount of current it will store up, on each charge, greatly exceeds that of ordinary storage batteries. Although electrically the lead accumulator and the iron and nickel accumulator have been made very efficient, the need for charging them at fairly frequent intervals, and the difficulty in handling them, due to their size and weight, have been undoubted disadvantages. It is claimed that one of the new accumulators, not so heavy as a standard form of lead battery, has a capacity nearly ten times greater than that of a lead battery. It follows from this that such a lead battery would run ten times as long as a lead battery for each charge, or alternatively, that a battery operating on the new principle made to have the same capacity as ordinary lead batteries, would be so small and light that it could be carried about in the pocket.

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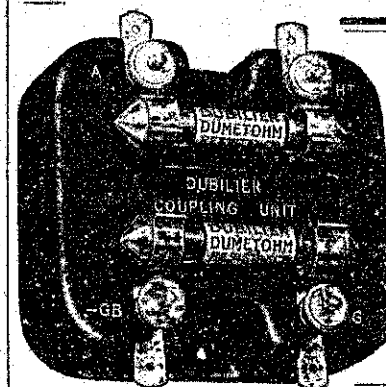
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Glossary of Wireless Terms

UNDER this heading we will give regularly sections of the glossary of wireless terms which is a prominent feature of the N.Z. Radio Listeners' Guide. In that book, although set in the smallest type, it occupies some 13 pages, and is definitely in our opinion the most comprehensive and complete glossary on modern lines which has been made available in the Dominion. For the benefit of our readers the glossary will be reprinted in our columns.

DESMAGNETISATION.—Telephone and loudspeaker magnets, having a definite polarity, may become demagnetised and consequently weakened, if the instrument is wrongly connected to the set, so that the current opposes instead of assists the permanent magnetism of the core. The positive terminal of phones or loudspeaker should be connected to that terminal of the set (sometimes also marked "plus"), which goes directly to H.T. plus (B battery plus).

DETECTOR.—A device, usually either a valve or crystal, for converting into audible sounds the radio impulses received from the aerial circuit. A valve which carries out the function of detection by means of a grid leak and grid condenser (known as grid rectification) or by variation of the grid potential by means of a potentiometer (known as anode rectification). A detector valve should never have as high a B battery voltage applied as in the case of an amplifier valve. To obtain the best results various B battery voltages should be applied to a detector valve before the correct voltage is decided upon. See "Rectification" and "Condenser, Grid."

DIELECTRIC.—The substance, or element, occupying the space between the plates of a condenser. An air dielectric is now generally used in variable condensers, and a mica dielectric in fixed condensers.

AIR DIELECTRIC.—The most usual form of variable condenser makes use of air as a dielectric medium, but as the dielectric constant of air is low (unity, in fact), a greater area of overlapping plates is required for a given capacity than if mica, ebonite, oil or glass were used. For power purposes where high voltages are used, air has the advantage of being self-healing in the event of a sudden surge of pressure breaking down its insulating power and causing a spark; but as the same applies to oil, which has a higher dielectric constant and consequently necessitates a smaller bulk, this is more commonly used for power purposes.

DIRECTIONAL RECEPTION.—For all practical purposes the usual outdoor aerial may be regarded as non-directional—that is, it is capable of collecting energy from any direction. Theoretically, however, the free end of the aerial should point away from the transmitting station. Generally speaking, the lower an aerial the more directional is its effect. A loop aerial is distinctly directional.

DISCHARGE.—The operation of exhausting the accumulation of electrical energy in either an accumulator or a condenser. A lightning flash is a visible and audible discharge of the accumulation of energy in the atmosphere to earth or any point—such as a cloud of lower potential.

DISTORTION.—In the endeavour to obtain increased range or volume without extending the set, the latter may be overworked, with the result that the desired increase is obtained at the expense of quality. If reaction is pushed too far, distortion reaches painful limits. Distorted loudspeaker reception is usually due to a badly-adjusted set rather than a fault in the loudspeaker, to lack of a C battery, poorly designed audio transformers, or transformers of too high a step-up ratio. With respect to the last-mentioned the second audio-frequency transformer should, as a rule, not be of a higher ratio than three to one. A higher ratio transformer may be used immediately after the detector valve—that is, in the first stage.

DISTRIBUTED CAPACITY.—It is desirable that a tuning coil should possess a natural frequency in which the inductance component is high and the capacity is low as possible. To this end, various systems of winding designed to reduce the inherent distributed capacity of the coil to a minimum are adopted. Bank, honeycomb, or basket windings may be cited.

D.S.C. WIRE.—Double silk-covered wire. As silk is a better insulator than cotton there is less likelihood of breakdown in coils wound with silk. It is more expensive than cotton, naturally.

DUAL AMPLIFICATION.—A form of circuit in which a single valve is made to do

TELEVISION STUDY

PROBLEM OF WAVE-LENGTH

INVESTORS WARNED.

RADIO television to fit the waves instead of waves to fit television was proposed recently in New York by the United States Government Radio Commissioner, O. H. Caldwell, as a field to be more thoroughly studied by scientists. Mr. Caldwell explained that radio television as it is now being developed calls for the use of channels between fifty and 500 kilocycles wide, depending upon the size of the image desired, and that there are only a few such bands available in the short wave spectrum. Because of the meagre number of such television "roadways" which can be assigned without encroaching on other established waves in that vicinity, Mr. Caldwell expressed the belief that engineers will find a way some day to confine television broadcasts within a few kilocycles.

"The enthusiastic inventor should remember that not only the problem of television transmission and reception has to be overcome, but the problem of fitting television into the wave spectrum has to be surmounted simultaneously before television can become a service to the public," said Mr. Caldwell. "Great care should be taken by persons proposing to invest in television proposition to make sure that the commercial television application will measure up to the bright prospects indicated in the laboratory experiments."

"According to our present knowledge a very wide frequency band will be required for any satisfactory television operation, and it is already apparent that only a few such bands can be put into service. The Federal Radio Commission has been disposed to grant to laboratories the use of the ether for experimenting, but to date engineers have largely devised things just to put on the wavelengths rather than to devise methods of fitting devices into narrow limits on the all-too-small radio spectrum."

Mr. Caldwell pictured the future radio television scheme, in the light of present knowledge, as consisting of a few very powerful stations, each capable of covering the entire country with its broadcast. Commenting on recent talk about plans of television broadcasters, he said that to his knowledge there had been no application lately before the commission for permission to use any of the waves for such purposes.

Mr. Caldwell was in the New York and New England area for a few days to listen-in on the waves and also to learn what listeners have to say about radio, both new and old, before returning to the task of formulating with the other commissioners the future radio picture of the country.

2YA ORCHESTRA

APROPOS of programmes, "Wanganui," in this week's "Mail Bag," submits a weighty argument and hopes to see the subject ventilated further. His suggestion, based on an analysis of a week's renderings by the 2YA orchestra, that the position of two-thirds classical and one-third light opera and dance music be reversed, in conformity with popular taste, is one which can only be endorsed. I cannot say that I agree with your correspondent's view that the orchestra should figure more in the programmes, for I think that we hear ample of this enjoyable combination of instrumentalists. "Wanganui," in quoting 3LO's huge revenue, as well as drawing attention to the predominant fare supplied by that station, viz., light music and comedy items, makes out an excellent case for the adoption of such a programme policy by the New Zealand Radio Broadcasting Company. It passes my understanding how radio, as a home recreation, is ever going to enthuse the general public as it should do, while the contrary policy is being pursued. The non-appearance of the dinner-music sessions, referred to by your correspondent, does not cause me, personally, much sorrow, for after all the music was intended to be of the "subdued" type, and my little circle are all satiated with the latter. There is one thing, however, which I do mourn, and that is the disappearance of a dance band from 2YA. Really, Mr. Editor, are we never to hear one again from Wellington. We were promised Saturday evening dance sessions this winter, which have not materialised. [We are not aware of any such promise. When the orchestra started Saturday was set down for vaudeville.—Ed.] However, in closing, sir, there can be no doubt but that in the fulness of time our radio programmes really will be popular, and with regular dance sessions at the close of each evening's entertainment—not in the form of gramophone records.—W.G.R. (Wellington).

Some Suggestions?

WHEN I started listening-in, Easter, 1927, there was a very poor choice of fare from New Zealand stations, and it was only Australian stations which made radio worth while. Now the New Zealand Broadcasting Company are giving us quite a feast of musical items, which are appreciated by the majority. For a young country like New Zealand the Broadcasting Company are quite well to the fore in the way of high-powered stations and have skilful engineers who are the chief link between artist and listener. There is quite a lot to alter and add in the way of management to suit listeners, and bring more attraction to the still waiting public.

Does the Broadcasting Company for one minute put themselves in the place of a listener who has invested £40 in a 5-valve set? Have they ever sat over their machine burning midnight oil

ETHICS OF BROADCASTING

AN industry, like an individual, becomes a useful member of society, when it attains consciousness of its moral duty to others. During its early struggle for existence neither an individual nor an industry can think of aught but itself. But as either grows in strength it begins to think of others in terms of its ideal behaviour toward them. The fineness of these ideals is a measure of the real development of the industry or individual.

Consequently, great interest should be attached to the first code of ethics which has been recommended for adoption by the United States National Association of Broadcasters as printed in the latest number of their official publication. Do the broadcasters really realise their moral duty and responsibility? Are they ready to be admitted to the ranks of those who are working for human advancement? Their code of ethics answers affirmatively:—

"1. To realise that radio enters into the daily lives of a greater number of people than any other man-created or man-directed activity since civilisation began.

"2. To realise that no enterprise can long endure and prosper unless it renders a real service to humanity.

"3. To be conscious that the vast audience we reach is of mixed tendencies, prejudices, and beliefs, and to guard against any utterance or false note that might offend the sensibilities of any.

"4. To realise that radio goes as an intimate friend into the homes, and helps to mould the minds of little children as well as of grown-ups.

"5. To realise that the development of better cultural standards, better living, and better thinking is our principal mission.

"6. To realise that there is a greater gain in holding fast to an ideal than in the temporary advancement of any individual station."

right out after distant stations? Have they ever had a party of prospective listeners to give them a musical treat and the wonders of distant reception, and the only proof is by the call sign? My suggestions are: Leave out the everlasting useless reiteration of George Court, Karangahape Road, and A. R. Harris Company Buildings. Always give the call sign between items; it is essential to people logging stations, also the name of the artist, then a person can have a choice of performer. In afternoons, why not start one station earlier, also evenings could be earlier in the winter months. Reading over most letters, there is unjust criticism and no serviceable suggestions.—James A. Moore, Dannevirke.

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Children's Sessions

AT 1YA.
TUESDAY, July 24—Uncle George in charge, supported by the pupils of Miss Blamires, in songs, piano pieces, and recitations. Letters and birthday greetings.
WEDNESDAY—As I was walking round the corner, I heard some people say: Look out, here comes old Uncle Tom, He's off to 1YA. He always talks to little boys and girls on Wednesday, So hurrp up and listen in, Hip! Hip! Hip! Hip! Hurray.
THURSDAY—Peter Pan in charge. Bayfield Choir with choruses and solos, assisting. Look out for a jolly evening.

ply explained. Cousin Gladys will sing and little cousin Beverly will play a violin solo.
WEDNESDAY—Mother Hubbard and Uncle Peter have a surprise or two for you to-night, and cousin Ken and his banjo will make you feel happy and bright, and Little Red Riding Hood and Miss Muffet will sing and recite.
THURSDAY—To-night Chuckle and Aunt Pat will tell you about the Gypsies and their music. Cousin Tempe will recite "Jim" and "Something Unusual."
FRIDAY—Big Brother and the Captain again to the fore—and there will be some delightful singing and playing by the pupils of the Ferry Road Convent.



Waipounamui Maori Girls College. Performing on July 19. —Photo Stefano Webb.

FRIDAY—Something unusual for the radio family to-night.—Nod has with him girls from the Queen Victoria Maori Girls' School. They will sing to us in Maori, poi songs, canoe songs, and give cries of welcome. Be ready to listen in at 6 o'clock sharp.
SATURDAY—Here's Cinderella, and with her cousins playing the piano, and the violin. Letters, birthday greetings, jokes and puzzles.
SUNDAY—Children's Song Service conducted by Uncle Leo, assisted by cousins from Beresford Street Sunday School.

AT 3YA.
MONDAY, JULY 23—"Scatterjoy" will tell of the many funny ways in which letters have been mailed, after which there will be a tiny tot's story, and a talk on "Wonderful friendships of animal pets for their masters." How girls and boys may grow quaint new plants indoors, will be sim-

SATURDAY—Uncle Sam and Aunt May will bring forth out of their treasury things new and old—music, stories and repartee.
SUNDAY—Children's Song Service with Uncle David in charge, and a group of singers from the Lutheran Church Sunday School.

AT 4YA.
TUESDAY, July 24—Hello! hello!! hello!!! Do you remember Mr. Abel, headmaster of the High Street School, who talked about Zeebrugge? Well, to-night he talks about another ship and another wonderful voyage. Also, the choir from the Anglican Boys' Orphanage will be singing songs. Big Brother Bill, too—no, not singing, telling tales.
FRIDAY—What happens when the girl guides hold a mass parade? Big Brother Bill doesn't know; but why not listen in to-night, with him, and hear? The Anderson Bay companies will be at 4YA.

Coupon for Frequency Test on July 24

See Special Article on Front Cover.

One Guinea Prize

Information Concerning Nature of Set.

Name Address

	Frequency.	HOW RECEIVED BY SET.		
		Normal	Fading	Silent
Frequency series representing the overtones which are necessary to obtain correct reproduction of quality.	30,000			
	16,384			
	15,360			
	14,336			
	13,312			
	12,288			
	11,264			
	10,240			
	9,216			
	8,192			
4th octave above middle C.	7,178			
	6,164			
	5,120			
	4,096			
	3,072			
	2,048			
	1,024			
	512			
	256			
	128			
3rd octave below middle C.	64			
	32			

NOTE—Minimum Range for Reasonable reception. 4,000 to 80

Our Mail Bag

Hints to Broadcasters.

Way-back listeners-in have little time to keep posted on all matters, sport and otherwise, and in my opinion it would be a great pleasure to hear on Saturday evening, after the results of the day's play, how the different teams stand in the competitions. This would take about 2 or 3 minutes for each centre, and would be much appreciated.

The wholesale prices of vegetables and fruit, as given three or four times weekly, are little use, as the prices given are wholesale, and when one hears that Delicious apples are 3s. 6d. to 6s. per case, and second quality 2s. 4d. per case, and then sends for a case or two, they are informed by the retailer that Delicious apples are 9s. per case, and that second quality are not stocked. The report, I think, is misleading to the listeners-in, and the time might be given to better advantage.

What about the foreign policy talk? Are they to be continued? I hope they will, as 15 minutes weekly to keep us posted in the latest about the Empire policy is surely well spent.

Many of the gramophone records come over the air marvellously well, and it is often impossible here to tell whether it is from an artist in the studio or from a record. Could not, however, a few more sacred or semi-sacred records be given? I have nothing but praise for your programmes, but could one evening a week not be set aside mainly for old songs and music: it would be as good as a tonic for many elderly listeners-in?—Listening-in, Olakune.

Church Services.

CAN you tell me why preference is given to the smallest, numerically, religious denomination in the matter of broadcasting their services? Taking the programmes from June 10 to July 1, we find that Church of England services have been broadcast three times, Methodist three, Presbyterian four, Congregational once, and Baptist or Church of Christ no less than five times. There are committees in connection with some of the radio stations to arrange the order of preference for services, but there appears to be no co-ordination between them all. This is a matter which the Broadcasting Company should take in hand immediately, for if co-ordination was brought about the present unsatisfactory state of affairs would no longer exist. Another matter which needs immediate attention is the way in which 2YA fails to keep anything like advertised time when transmitting its programme. Since the establishment of the beautiful orchestra at this station many of us make a point of "tuning in" for the request and repeat numbers, and it is very annoying to find, as happened on Friday, 20th, that they were "put over" fifteen minutes ahead of time. Attention to small details like this will tend to make listeners-in more contented than they are at present. Heartily congratulating you on your splendid paper.—Valves.

[On inquiry we find that during the period mentioned, namely, June 10 to July 1, denominations have been broadcast as follows:—Anglican 4, Presbyterian 4, Methodist 3, Baptist 2, Church of Christ 3, Congregational 2, Unitarian 1. The two largest denominations, therefore, have each been broadcast more often than any of the other denominations. Co-ordination of services between stations is not as simple a matter as it appears on the surface. When it is considered that at two stations six denominations are broadcast, at the third seven denominations, at the fourth only five denominations, it will be seen that it is not possible to maintain a regular rotation at each station, and at the same time co-ordinate the four stations. At three of the company's stations the broadcast of church services is in the hands of committees on which are representatives of six of the strongest denominations, and the company adopts whatever arrangement is recommended by the committees. The timing of the items on programmes is a very difficult matter, and although stations adhere as closely as possible to the published time, rearrangements of the programmes are necessary occasionally,

and that, of course, causes a variation in time. The published times are approximations, as it is impossible to estimate exactly the time which will be occupied by each item. The complaint made has been noted, and efforts will be made to avoid "beating" the programme time.—Ed.]

No Complaints.

RECEPTION here from 2YA is almost perfect, and we cannot wish for anything better. We get full tone right through the programmes without the hint of a fade or mushiness. Auckland and Christchurch reception here is not at all good—both stations fade badly. The innovation of the Studio Orchestra is no doubt a great asset to 2YA, and a treat for listeners-in. The programmes throughout the week are all that one could desire, and we spend many pleasant hours while 2YA is on the air, and all for the huge sum of £1 10s. Really, the Broadcasting Company should be had up for "profiteering." Carry on with the good work, 2YA. No complaints.—R.S.H. (Hawera).

More Gramophone Desired.

IT is with pleasure I renew my sub. to your most interesting and instructive paper. In reference to broadcasting, I have found no cause to criticise; certainly there are items, some "jazz," I do not care for, but somebody else does, no doubt. The programmes put on by the company's stations have shown a wonderful improvement during the last eighteen months, and now compare more than favourably with those from Australia, and, "whisper it gently," Japan. The only suggestion I can offer is that more use be made of the gramophone in providing our evening programmes, as these items come "over the air" remarkably well, besides giving listeners an opportunity of hearing the world's best (call it "canned" if you like), which we would not otherwise often get.—John Luke (Clevedon).

That "Birthday Party."

THIS radio is just one darned thing after another. There is always something doing. Shattering static, sun-spot cycles, Southern Lights, silent Aussies, Springbok successes, Sellen's skilful short-wave seekings, Stout's subtle screed, Smith's Southern Cross, Sunday concerts, super-this and super-that, and now we have "Ponty's Birthday Party." Bravo, Wellington Radio Society! But wait a moment. I see, according to the preliminary announcement, "an arrangement has been made with the Broadcasting Company to broadcast the ceremony." So it's to be a "ceremony." Well, I always did say that you city people take your joys too solemnly. Up here a birthday party is a "celebration." The last one up here can be summarised as seventeen jazes, sixteen fox-trots, fifteen songs, twelve gallons of beer, three fights, one broken rib, two ditched motor-cars and one police-court case. The only recitation was "Tahu" Jack's, whom we discovered standing in the moonlight at 2 a.m. handing out Bracken's "Not Understood" to our neighbour's prize Berkshire boar. Not much "ceremony" about our birthday parties. I see the Wellington Society's secretary "has specially written and arranged a most novel and original programme to be broadcast on August 2." I notice, also, he has taken the very wise precaution of copyrighting it. But it is not clear whether he has merely copyrighted the printed particulars or the birthday party. Anyhow folks would steal the insulators off your aerial nowadays, and one can't take risks when scattering mental diamonds, so to speak, through the ether.

There is one aspect of the birthday party which has got us all puzzled, and there has been no beer consumed over this topic than any other since neighbour Bob's cow "Strawberry" went unexpectedly dry in November, 1923. The preliminary notice states: "An actual birthday party will be broadcast. The gentleman, at whose house the party is to take place, shall be known as 'Ponty'; and he lives about three miles from 2YA broadcast station. . .

The party will be true to life in every respect, and there will not be a dull moment during the ceremony. . . During the birthday ceremony there will not be any break nor any dull moments, as the microphone will be left switched on to 'Ponty's' drawing-room right through." But we read the other day that the station manager of 2YA, Wellington says the entertainment will be given in the studio. Then how the heck can "the microphone be left switched on to 'Ponty's' drawing-room right through" at "Ponty's" house, three miles from 2YA? We have to believe the station manager as the Broadcast Company is not the concern to start bluffing the listeners. We read, also, "The party will be true to life in every respect." If that is so you city folk entertain some very mixed company—run your eye over this list—"Amongst the guests invited to 'Ponty's' party and from whom it is expected many interesting items will be heard are:—Count Zermelt, whom 'Ponty' met in Paris in 1915. 'Ike,' a wealthy investor, and speculator in real estate. Sir Ronald Inchcliffe, rich banker from New York. Jim, member of a touring show and leader of the orchestra. Ivory Tickle, the human piano. Bill, the radio engineer. Snowy, a friend of Bill's. 'Kruschen,' an old salt of the sea, the comic man on board the ship Good Hope. Mr. Haslam, teacher of singing. 'Nosey Parker,' cadger of cigarettes. . .

We can't imagine a rich New York banker and a real live count appreciating the company of 'Nosey Parker,' the cadger of cigarettes, even at an actual birthday party. Of course a good deal has been done in this ultra-modern age to break down social barriers, but up country here you'd never see our district doctor singing "For He's a Jolly Good Fellow" with the borough dustman, even at a very private birthday party. I saw it stated somewhere that there are to be ladies also present at Ponty's birthday party, although, mind you, Ponty's wife was "enjoying herself in Auckland." It is unheard of up here for a husband

With entry upon our second year renewal of subscriptions is very actively in progress. A great number of readers are taking the opportunity of advancing suggestions in connection with broadcasting. We wish to make it known that these suggestions are greatly appreciated, and in every case are sent on to the proper quarter. Where use can be made of matter in the "Mailbag Section" that is done, but with the special pressure obtaining at the moment we are unable to give space to all matter that is coming forward. We wish readers to know, however, that no suggestion is ignored—all are given consideration.—Editor.

to entertain ladies (even accompanied by gentlemen) when the lady of the house is away, especially as the wife was "unaware that her home was to be the scene of an uproarious party." Still, as she is enjoying herself in Auckland, I suppose it is a case of tit-for-tat. There is one guest in particular we can't get the hang of, and he is the "human piano." Does this signify that when the night is well advanced the others will stretch this gentleman out and tickle music out of him? However, real party or bogus party, we're going to be present that night at Ponty's turn-out, if not in body at least in spirit, for we're ordered a case of whisky for the occasion, and we'll endeavour to swallow both the party and the whisky—"Merenha," Tetahi, Taranaki.

2YA Orchestra.

WITH reference to your reply in the "Record" of July 13 of my criticism published on July 6, I may say that I do not consider that I have arrived at any wrong conclusions. The whole point depends on what is classical and what is light opera and dance music. My classification differed from yours, and I think the great majority would easily list one half of the items in your popular list as classical or semi-classical. The difference between my time, 2½ hours, and your time, 3½ hours, is caused by the inclusion of trio and solo items evidently by members of the orchestra, while I dealt solely with orchestral items. In any case, your time, 66 plus 121 minutes, only amounts to 3 hours 7 minutes, and not 3½ hours. My reference to the 3LO Synco-Symphonist was not in any way a comparison of the merits of the two orchestras, but was merely to show that 3LO devotes a great deal of time to jazz and comedy items, and has been and still is the most popular station in Australia, and consequently is giving the most general satisfaction to listeners.

My main point, and this is not only my own opinion, but the opinion of many local listeners, is that we should get more dance music and musical comedy and jazz items than we are getting.—"Wanganui."

Some Suggestions.

WOULD it be out of place for me to suggest that 2YA be asked if it is possible to arrange for one evening, say, every two weeks, for a programme of waltz or dance music played by the station orchestra. This, I feel sure, would be welcomed by a good many listeners. Some of the items put over lately, although quite good in their way, could have been replaced by much brighter music, hence my suggestion. It might also be possible to put the programme on at 7.30, as the writer, being one of those on the land, is seldom able to listen to the whole

programme. Would you also oblige me by answering in your columns what is a reasonable charge (cash) for re-charging a wet battery (A). There is quite a lot I could say in reference to 2YA programmes, but am in hopes that there will be a decided improvement when the official listeners-in get busy.—"Hopeful."

[City charges are: 60 amps. 2/6, 80 amps. 3/-. 100 amps. 4/-. Country charges may fairly be higher, allowing for conditions and facilities.—Ed.]

Who is This Stranger?

COULD any of your readers identify this station for me? I just picked him up at midnight, July 3, on about 378 metres, and transmitting mandolin music with banjo accompaniment. They were good speaker strength at times, but fading was intense, and Morse and static interfered with speech, but that didn't matter much as all talking was in Spanish or some such language.

At no time was English spoken when I could hear them, and they closed down at 3.30 a.m.

On passing down over 40Q they were easily found coming in stronger than Brisbane at the time. A very excellent class of music was played and came over as clear as a bell.—N. C. Winstanley (Picton).

To a suggestion on our part that he had heard one of the Japanese stations, Mr. Winstanley replied: "I'm afraid you are wrong. The nearest Jap. station to 40Q and below it comes in about 3½ points on the dial, and the stranger is between the Jap. and 40Q, as I had all three stations on this particular night quite clearly. I have since had the stranger twice, but not so clear, probably because I have not waited up so late. And then, again, the music from the stranger was beautiful, a description which cannot with any stretch of imagination be applied to any Jap. station. Then the language was entirely different from the Japanese; at times the strength of signals was pretty well R3, and perfectly clear, so I could not mistake the language very well."

[Can any reader oblige.—Ed.]

Aerial on the Ground Still Worked.

DURING a recent wind storm my aerial mast was blown down, but this was unknown to me, and I continued to receive the various stations with the usual clarity and strength. Next morning I found that the 14 gauge bare copper wire was lying on the surface of the ground. As time did not permit re-erection, there it remained. The same afternoon two cars and a small motor-lorry ran over the wire. The difference to reception was negligible; in fact, that evening (Friday), 2YA was at its best. This recalled experiments that I carried out in Taranaki in the years 1921-23. A single-wire aerial was erected 160ft. long, 70ft. high at the end near the set, and 15ft. high at the far end. This latter was earthed by means of connecting the wire to a length of galvanised water pipe of 8ft. and driven well into the ground. The set was connected in the usual manner. This arrangement was very satisfactory, and yielded louder signals. Unfortunately, the mast was a live gum tree, and in the heavy winds persisted in breaking the thread.

The next try-out was the use of the same length of aerial shunted by a variable condenser between the aerial and the ground, and a variable high resistance to ground at the low end. I had read experiments with a resistance in the Beverage Antenna. This aerial was only successful on certain stations. But connecting the aerial direct to the grid of the first valve, and the earth to the filament and shunting the condenser as above and eliminating the variable resistance, made the weak stations seem splendid. Shortly the writer hopes to erect a 40ft. Laker steel mast, using 12 insulated stay wires, the base of the mast supported by a 40,000 volt insulator—this latter had two petticoats broken and the Power Board had to discard. As several petticoats remained intact, it will make an ideal insulator. Four stay wires will be hard drawn copper, No. 14 gauge, and these will serve as the aerial, being led down the mast to the set. This umbrella type should prove A1. Should this latter come up to expectations I will gladly furnish details.

In regard to Mr. Pierce's system, were he to insert a good variable resistance in circuit with his various taps, there is little doubt that he would be able to balance the circuit. Under test, the earth in one part of the country, is, say, 1 ohm resistance. Except on rare occasions, anywhere within 100 yards of that spot will also test 1 ohm. A damp place is not always a good ground. Here in Arapuni, I have seen ordinary electric hand lamps not waterproof, burning under water, these latter becoming submerged before an electrician could remove them. We found on many occasions that river would not serve as an earth.—C. R. McDermott, Arapuni.

Some Suggestions for 1YA.

MAY I suggest (a) Exact standard time to be announced, not just "Station time"; (b) relays from other stations, for variety; (c) definite times for announcements, news, results, etc., say 7.30 p.m., 9 p.m. and 9.30 p.m.; (d) definite statement Saturday evening that from "going over" to Dixieland to closing time, only dance items will be given from 1YA; (e) definite statement at 7.30 p.m. of any postponement of lecture or special item? Best wishes for second year of "Radio Record".—W. H. Waddell.

[We understand in regard to the announcement of the time, every endeavour is made to state the correct time, and the station clocks are checked regularly every day by the scientific time signals broadcast from the Observatory at Wellington. The time

is introduced by an announcement that it is studio time, but this coincides with exact standard time. In regard to the broadcasting of news, it is contended that the company has adopted a scheme which is giving satisfaction, namely, the allotting of special half-hour sessions each evening from 7.15 to 7.45 p.m. in the case of Auckland for the purpose of broadcasting news items. In respect to the relay of dance music from Dixieland from 1YA, the orchestra at the Cabaret is co-operating with the station as fully as possible with a view to reducing to a minimum the intervals between dance numbers. The requirements of a cabaret, however, do not necessitate continuous music, and in the circumstances such intervals as are observed must be filled in by the station with the broadcasting of music or news items from the studio.—Ed.]

"Megohm" Appreciated.

WHILE renewing my subscription to your paper, I would like to take the opportunity of making a few comments on the work the "Radio Record" has done, and is doing, so ably. When I first sent in my subscription I expressed the opinion that your paper would fill a long vacant position. I am pleased to say it has come right up to my expectations in every way. I have been connected with wireless for eight or nine years, and although not one of the most ardent of "radio bugs" I have always kept more or less up-to-date with the advance of wireless both in New Zealand and elsewhere, so that for my purpose the general news of the "Record" has been very helpful to me. My spare time is very limited, and so I am not a very regular listener. Hence the programme portion is perhaps the least important to me, but when any item or event is particularly wanted it is very helpful to know just when it is coming off, without having to waste perhaps half the evening for it. In this way, I think the method of timing the items must be very much appreciated by all.

However, the most important section to me, and that to which I always turn first on opening the paper, is that conducted by "Megohm." I have built several of the components described at different times, generally with good success. When I have failed it has been owing to some alteration of my own, and I think "Megohm" is highly appreciated by many more people than who take the trouble to record their thanks.

I don't know whether you could arrange an article on "Screening" at some time, but as I am situated, one end of my aerial and my set is within 50 yards of one of the Lake Coleridge 11,000-volt lines, and I have often wondered just how much effect this has upon my reception. One thing is certain, that whatever kind of set I have used, and I have used a good many, I have only had fair results, and never anything outstanding, and so I have come to the conclusion that the power line is responsible. Otherwise my aerial is clear of all trees and buildings and situated about three-quarters of a mile from the Port Hills. The aerial is approximately at right angles to the power line, and no hum is evident at any time.—D. H. Lane (Christchurch).

"Megohm" will prepare an article on "Screening of Aerials," to appear at an early date.—Ed.]

Popular Music Wanted.

ON behalf of many listeners in this district, I can endorse the remarks of "Wanganui" in your issue of July 6 re the station orchestra. A perusal of this week's programme certainly shows that the orchestra is not overworked, and the promised half-hour of dinner music would certainly go a long way to popularise station 2YA, that and a more judicious balance of music by the orchestra. We are getting too much of the heavy classical music. Give us more light opera and dance music, and I am sure the Broadcasting Company will be catering for the majority of listeners; the only complaint I ever hear of the orchestra is too much classical music. Just one more comment. When will Station 2YA engage the services of a real expert to operate the transmitting station. The distortion of 2YA, the most powerful station in New Zealand, is shocking, and absolutely nerve-racking. Last week in this district it was a nightmare and spoilt all programmes. We will live in hopes that the honorary listeners will soon enlighten the Broadcasting Company. The transmission from 1YA and 3YA is miles ahead of 2YA. In this district it is always clear, although it does fade.—R. C., Ihurua.

Old Favourites Missed.

I HAVE much pleasure in stating that we derive many an enjoyable entertainment from 2YA. We have had our set since the beginning of last December. We miss some of the good singers, Miss Norah Green and Dr. Arthur Coe, whom we have not heard for quite a time. We also do not hear so many violin, cello, or flute solos, which come in very clearly. We think most of the items played by the orchestra are very good. The gramophone items played by orchestras do not come in very clearly, especially those with bass instruments. Anything in the nature of violin solos, trios, or singing, not choirs, come in well. Auckland and Christchurch fade, and lately Christchurch has been very mushy. We are very sorry to hear the number of licenses that had decreased and hope they will soon return to normal. We would not like to be without radio. In a country place one is in touch with the outside world.—G. B. Curnow (Koromiko).

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