

Auckland's Carnival--The Five Valve Set--Constructing a Crystal Receiver--Big Radio Conference Holiday Programmes



Published Weekly

REGISTERED G.P.O., WELLINGTON, N.Z., AS A NEWSPAPER

Price 3d.

VOL. I, NO. 24.

WELLINGTON, N.Z., FRIDAY, DECEMBER 30, 1927.



MISS AVA SYMONS.

Miss Ava Symons, a member of the popular Symons-Ellwood-Short Trio at 2YA, whose magic bow has charmed the hearts of so many lovers of good music. The items given by this trio are always bright and arresting and appeal to every listener-in.

The Cause and Elimination of Fading

The fading question is one of intense interest to all radio fans and the investigation by "Megohm" into the fading experienced from 2YA has enabled listeners to appreciate some of the causes responsible. Anything that would tend to decrease the "fades" would be an untold boon to those who live at some distance from our broadcasting station. This article, which appeared in this month's issue of the "Radio News," details the results of a series of experiments conducted by foremost radio authorities in England. Listeners who have closely followed the subject will see that Dr. Appleton covers many of the points brought forward by "Megohm" in our own investigation. Since this was carried out certain radio enthusiasts who consider they know all that is to be learnt on this question, have criticised "Megohm's" finding, and blamed the transmitting station. If they will carefully read this article they will find that Dr. Appleton has discarded the theory that the station is responsible.

THE discovery that radio waves, unlike their first cousins, light waves, are able to travel in curved paths around the surface of the earth and thus be received in the Antipodes, was regarded with astonishment. In the first place, it was definitely contrary to the theory then existing and, in order to explain it, the so-called Kennelly-Heaviside layer was postulated. It is reasonable to suppose that sunlight, falling upon the earth's atmosphere, may ionize it, and produce a layer of electrons at a high level. It has been shown by Larmor and others, that a radio-wave, entering this region, will be either absorbed, retarded, or bent back toward the earth, depending partly upon the amount of ionization, partly upon the wave-length of the radiation itself. It is thus possible to explain many facts about radio reception.

No theory of the propagation of radio waves over the earth's surface will be complete, however, unless it also explains the large and rapid variations of signal intensity and direction of propagation of the waves as observed at night, and, to some extent, during daylight, particularly in winter. It has been recognised for some time that the phenomenon of "fading" may possibly be due to

interference between the direct wave along the earth and the wave reflected from the Heaviside layer; but experimenters have found great difficulty both in proving this and in accurately describing the exact mechanism of the phenomenon.

Dr. E. V. Appleton, the well-known professor of Physics at Cambridge, England, has performed a series of brilliant experiments which deal with the crux of the question. He and his collaborators first set out to discover definite experimental proof of the existence of the Heaviside layer.

MEASUREMENTS OF RECEPTION.

The fact that temporary variations of signal intensity are experienced at night for short-wave transmissions is well-known to many broadcast listeners. In a normal case of signal fluctuation,

such as may be experienced with a receiver 150 to 200 miles from the sending station, the variation of signal intensity is so marked as to be noticeable in the 'phones. In order to measure accurately, however, the variation in intensity, Dr. Appleton discarded audible estimates as unreliable and obtained an accurate gauge of intensity by means of a galvanometer. The circuit used is shown in Fig. 1. It employs tuned radio-frequency amplification which is coupled on the output side to a detector circuit with a crystal rectifier and a galvanometer in series. In the preliminary experiments, galvanometer readings were taken every six seconds and plotted to obtain a curve. In the later investigations, however, greater accuracy was obtained by

recording the beam of light reflected from the swinging galvanometer mirror, on a moving photographic film.

Fig. 4 shows the general character of the fading and its increase after sunset. In order to explain the observed phenomenon, it is necessary to assume that rays of appreciable intensity are reflected at night from the Heaviside layer. These interfere with the ground wave at the receiving station in such a way as to produce fading.

—(Continued, on page 2.)



CHILDREN OF CLYDE QUAY SCHOOL HEARD FROM 2YA.

Following on its policy of making the children's session bright, the Broadcasting Company has secured the services of a number of children's choirs.

FADING

(Continued from page 1.)

WAVE INTERFERENCE.

In order to picture the process, let the reader refer to Fig. 3, where the two paths are represented. Let us suppose, to make the calculation easy, that the wavelength is 500 metres and the distance between the two stations

angle of the downcoming rays not constant.

The most obvious explanation of fading would be to ascribe it to the frequency-variation of the transmitter, but a little thought will show that it would be a poor station indeed which would be unstable by a full metre. An alternative theory, and one which has met with wide acceptance, is that rapid

Heavyside. The galvanometer deflections are in opposite directions. This result is one of particular interest to radio fans; especially since it indicates a possible solution of the fading problem.

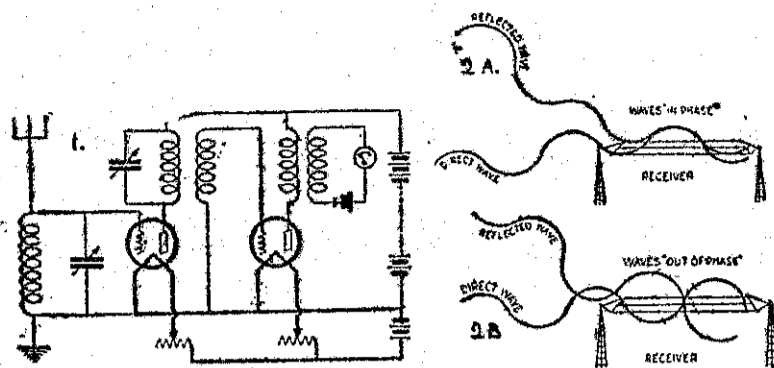
A COMBINATION ANTENNA.

It is not too well known that a combination of loop and aerial provides a simple means of eliminating signals

radiation. Nevertheless, there is no question but that it should be tried.

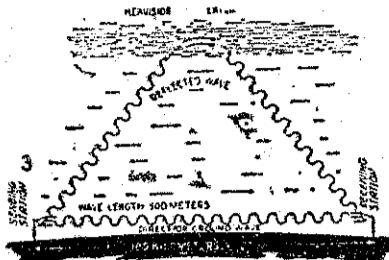
Dr. Appleton's researches have thrown considerable light on the causes, nature, and elimination of fading. His results are verified by experiments conducted over relatively short distances, not exceeding a few hundred miles; and it is uncertain whether or not the fading of a very distant station is to

at times. At 11.45 p.m. an orchestral (?) item was heard. This was similar to the Chinese orchestra heard from 2YA a few weeks ago. This is probably a Japanese station, perhaps JIPP, Tokyo; it works on 95 metres. I could not get any call while listening; they were still on the air when I closed down at 11.50 p.m. Does anyone know this one? "An Japanese" was repeated at intervals on Thursday morning while listening to this stranger. At 7.30 a.m.

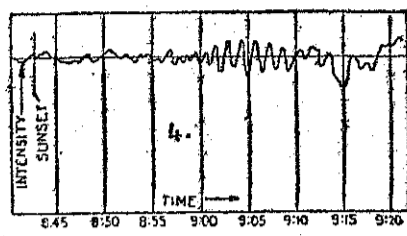


This diagram illustrates the circuit used by Dr. Appleton to measure the fading of signal strength.

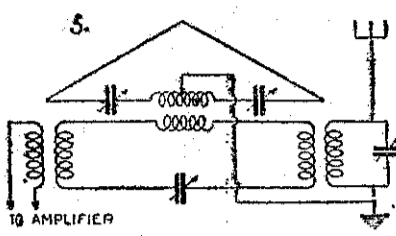
If the ground and the reflected waves reach the receiver's antenna in phase (fig. 2A), reception will be good, but if they arrive out of phase (as in fig. 2B), reception will be greatly lessened.



This diagram shows how a radio wave breaks up into a ground wave and a reflected wave, and the path each travels.



This curve illustrates the variations in the intensity of radio signals after sunset. The fading becomes more marked.



Combined Loop Aerial System for elimination of signals from one direction.

100 kilometres (100,000 metres); there will be, then, 200 waves in the direct path. If the reflected wave traverses exactly twice the distance, the two waves will be "in phase"; i.e., vibrating similarly at the receiver, as pictured in Fig. 2A. Since the crests of the waves coincide, the two waves will assist each other and the reception will be good.

Suppose, now, that the radio-station's wavelength is changed from 500 to 498.75 metres. It is easily calculated that we will have 200.5 instead of 200 direct waves, and 401 instead of 400 indirect waves. The extra half-wave changes conditions, as shown in Fig. 2B. The waves will arrive, "out of phase," vibrating in opposite directions, and tend to annul each other. If the wavelength be further decreased, we have another maximum of intensity, and so on.

Professor Appleton arranged with a broadcast station that its wavelength should be systematically and regularly varied through a small range, say, ten metres, in the period of half a minute. The coils used on the receiver were specially wound with high-resistance wire, so that broad, flat tuning was obtained. The results showed definitely the maxima and minima predicted by theory and further enabled the eminent investigator to place the height of the Heavyside layer at about 50 miles. He obtained also some results which indicated the presence of some triple-reflected rays. He also found that the

variations in the height of the Heavyside layer are the cause of fading. It will be shown later, however, that this view is untenable.

RECEPTION AT SUNRISE.

The effect of daylight was extremely well shown. The observations were taken respectively at 3.51, 4.47, and 5.12 a.m., and illustrated the type of fading at the transition period, from dawn to sunlight. The wavelength of the transmitter (375 metres) was gradually increased by ten. During this stage the intensity of the signal varied periodically, and the changes were exactly duplicated as the wavelength returned to its original value. Sunrise occurred at 4.04 a.m., and with it came an increase in atmospheric ionisation, a lowering of the Heavyside layer to a height of 30 miles or so, and a consequent "attenuation" (thinning out) of the reflected ray. The fading was less at this time.

It has been urged by some that the reflected ray, instead of being deviated vertically, as in Heavyside's theory, has suffered horizontal deflection instead. Appleton has shown that if the first theory be true, fading should be stronger on a vertical line than on a loop antenna; while, if the second be correct, the reverse should be the case. In an investigation of the question, he finds evidence decidedly in favour of

from one direction. The sensitivity of reception of the ordinary antenna is shown at the left, that of the loop in the centre, and their combination at the right. In a curve known as the cardioid. Employing a special device, Dr. Appleton found it possible to eliminate the ground ray entirely and study the indirect ray by itself.

The results appear quite conclusive. They show, primarily, that the intensity of the reflected ray is by no means constant; and that its variation is definitely allied with fading. This is direct evidence against the view that fading may be attributed either to the variation of the station's wavelength or to fluctuations in the height of the Heavyside layer. We must, instead, postulate varying absorption of the indirect wave as the cause of the intensity change.

During the course of the investigation it was determined that the reflectivity of the ionised layer is small—from 0.2 to 6 per cent.—hence it is easy to see how a small change here will produce a marked effect in the receiver. Dr. Appleton has shown that about 100,000 electrons per cubic centimetre must exist in the Heavyside layer to account for the observations. During the winter and during the night, when the ionising power of sunlight is at a minimum, the reflecting region becomes higher and more attenuated, and, while longer distance reception is possible, fading is more marked than in daylight hours or in summer.

Dr. Appleton has conducted some experiments with a view to eliminating fading. While he has attained considerable success, he feels that the system will not completely do away with this trouble. Briefly, he reasons thus: Since fading is shown to be due mainly to fluctuation in the intensity of the atmospheric ray, it should be possible, by eliminating this, to receive a fairly steady ground signal, even in the night-time.

"WOBBLING" OF THE REFLECTED WAVE.

He uses the same type of antenna system employed to suppress the ground ray, and finds, on the whole, signal reception much steadier. He ascribes his failure in obtaining complete success to the variation of the angle of incidence of the indirect wave, as mentioned before; i.e., while he may be able to stop a ray received at a constant angle, it is impossible to do this when the inclination of the ray is rapidly and irregularly changing.

Since the suppressed-atmospheric-ray system described above will not receive rays striking the ground in a given direction, it is also incapable of radiating waves in the same direction. If this type of antenna be used at the transmitting station, to eliminate the indirect ray at its origin, it may be possible to reduce or completely get rid of fading; but Dr. Appleton, in the absence of experimental evidence, is somewhat sceptical regarding the probable success of such a scheme, owing to the lack of symmetry of the

be attributed to the same causes. We shall look forward expectantly to seeing more of the brilliant results which are being obtained by this eminent investigator.

SHORT-WAVE WORK

MR. SELLENS HEARS NEW STATION.

I recently received a card from Mr. W. R. Coxon, the owner and operator of the short-wave station OA6AG, Perth, says Mr. Sellars (Northland). He gives his wave-length as 52.9 metres, power about 200 watts. He is now testing at 6.30 p.m., W.A. time, almost every night for a short time. 6WF, of the same city, according to latest advice, is now broadcasting their evening programme each evening, from 8 o'clock, on 164.5 metres.

On Saturday morning, December 10, ANE were giving a programme of music. Volume was very loud, but modulation could be improved. 2XAD and KDKA were heard in the afternoon, and RFN in the evening, giving some very good musical items. KDKA signed off on Sunday at 4.13 p.m., after transmitting items by the Boys' Radio Band, vocal and orchestral. 2XAF relayed a programme of music from the Waldorf Hotel, New York City, and signed off at 12.3 a.m. E.S.T. Both stations were heard on the speaker, but not as strong as at times. 4AE, Gore, 3AP, Ashburton, RFN, Russia, and 2AQ, Taihape, were also heard during the afternoon and evening. The latter station was very loud, clear, and steady.

On Monday morning at 7 a.m. 2ME gave their call and stated they were "going over" to 3LO, Melbourne. All announcements after this were given as 3LO, Melbourne, testing. Gramophone items were given and were heard very well. They stated that until further notice they would be testing each Sunday from 18.30 till 20.30, Greenwich mean time (7 a.m.-9 a.m., Monday morning, N.Z. time), on 32 metres.

RFN was the only station heard during the evening on short waves.

NEW FOREIGN STATION.

On Tuesday morning from 6.28 o'clock till 7.30 o'clock a new foreign station was heard on about 31.5 metres at very fair volume, but decreasing as the time advanced. Several times I heard what sounded like "Allo! Allo! Allo! An Japanese. Sometimes after a slight pause, "An Japanese." There was not any music while I was listening, but just talk. Does any reader know who this is?

At 7.30 a.m. 3SW, Chelmsford, was heard testing. Speech was only just audible—sounded like a lecture first. A pianoforte item followed, which was a little better. RFN, 2AC, New South Wales, and ANE giving some good musical items, were heard during the evening.

The station "An Japanese" (?) was heard again on Wednesday morning till 7.40 o'clock. The last words spoken were "An Japanese." During the evening 2HM, New South Wales, and 7CW were heard. About 11 p.m. I came across another strange foreign station on about 35 metres. A man's voice was heard talking very rapidly and loud, with a woman saying a few words

the carrier of 5SW was heard, but not strong enough to get a speech or music. 2WW, New South Wales, and RFN were heard during the evening.

Friday morning found still another strange foreign station on about 42 metres. Broken English was spoken, but on account of Morse interference could not understand much. Some Greenwich mean times were given, and good night was said at 6.23 a.m., but the call was not heard. It must be well to the west of New Zealand to be saying good night when it is 6.23 a.m. here.

5SW was again too weak to hear more than their carrier. Not so many stations as usual, but three new unidentified ones.

THIS WEEK'S REPORT.

I have tried for 5SW, Chelmsford, recently, at 7.30 a.m., but this appears to be the end of the period of which it is audible here. The carrier can be heard, but only at times has any sign of speech or music been there.

A few weeks ago, when PCJJ was transmitting bi-weekly, they were often speaker strength up till about 7 a.m., after which the volume would go off very rapidly till 7.30, when signals were usually very weak. The special Christmas programme from England, to be heard here at 3.45 a.m. on Christmas morning, should be received well.

On Saturday, 17th instant, I was home too late for the American station, but heard PCLL, Holland, giving a good musical programme. They called Band-oeng (Java) during the time I was listening. 4AM, Palmerston South, and RFN were heard. A station on about 37 metres was on the air, but modulation was too rough to get the call.

2XAF were heard relaying dance music from the Rainbow Room of the Ynkon Hotel, New York, till 12.2 a.m. E.S.T. 1.30 p.m. on Sunday here. They were not as loud as usual 3AY and 2AT Wellington, 2AQ Taihape, and 7CW Hobart were testing. On Monday morning at 7 a.m., 3LO Melbourne, testing on 32 metres, put on some gramophone records. These were received very well. Their modulation is excellent. ANE, Java, was on the air early on Tuesday morning at good volume, and very steady. RFN was going in the evening. On account of being out on Monday and Tuesday evenings till late I was only listening for a few minutes.

CHELMSFORD AGAIN.

Wednesday morning 5SW, Chelmsford, went on the air about 7.30 a.m., and were a little stronger than some mornings. A man was talking till 7.50, this being followed by music, but all too weak to understand a word. During the evening 2AT Wellington, 2AB Wanganui, 1AR Auckland, 7CW Hobart, 2LG Goulburn, N.S.W., were logged.

The new stations reported last week have not been heard since. I have not been able to spare quite as much time as usual for listening, but hope to get plenty of DX during the holidays.

From broadcast station KFRC, San Francisco, every Tuesday evening at 8.30 a pianist plays modern and old-time numbers and listeners are asked to guess their names. The fan who correctly identifies the greatest number of thirty-six tunes played over the period of the contest is given a silver cup as a prize.



BRITISH
BUILT
BATTERIES

Good Quality

BATTERIES AND SERVICE

'Are the Backbone of a'

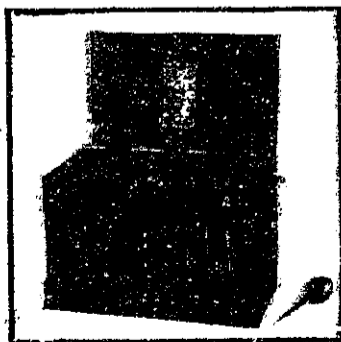
RADIO SET.

"A" Battery.

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

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

PRICE £6



Type H.T. 5, 90 volt, 2500 milliamps. capacity—takes place of two 45 v. drys—only needs recharging every two months. Fully charged.

PRICE £6/15/0.

Send for our twelve page Catalogue coming out before Xmas.

Gruar's Battery House

THE BATTERY PEOPLE.

9 MAJORIBANKS STREET,

WELLINGTON.

Telephone 20-937.

"THE BLUE SPOT"

Our Price 27/6

MAKE YOUR GRAMOPHONE INTO A LOUDSPEAKER

LAMBERT RADIO CO.

(Opp. Bank.)

'Phone 40-552.

"Polar Twin" Complete £20 18 6
"Loewe" Set (3 valves) £20 18 6
"Regent" Receiving Set £10 0 0
Crystal Sets from 5 0
Head Phones 10/-, 15/-, and 20/-
One Dozen double-sided GRAMOPHONE RECORDS, as sold at 4/- each, given to every purchaser of a VALVE SET.
(1st Floor), 360 LAMBTON QUAY.
Save High Shop Rents.
Call (next Stewart Dawsons)
TAYLOR & HARRISON.

Give Radio This Xmas

A GIFT THAT WILL SATISFY:

The Polar Twin

Runs entirely on dry batteries.

The Best—the Most Economical and Cheapest

:: Two Valve Set on the market. ::

Loudspeaker Reception of Australian and New Zealand Stations.

PRICE COMPLETE £11 10s. 0d.

"If it's in the air the Polar will get it."

Procureable from

Broadcast Reception Ltd.

CASHEL STREET

(Opp. Bath's)

CHRISTCHURCH

Also T. H. Blain, High Street, Rangiora; R. F. Joyce, Kaiapoi.

With Dealer and Customer

Getting Together To Solve Radio Selling Problems

The dealer is out to increase his sales. The prospective buyer wants to get the best possible value for his money. By understanding each other's viewpoint, dealer and customer can meet on a basis of perfect confidence. Should the dealer give demonstrations in the prospective buyer's home? That is a knotty problem. All dealers will be interested in the article below, which deals with that point, while prospective buyers will see this matter from the viewpoint of the dealer.

TEACH YOUR CUSTOMERS.

Do you take it for granted that your customers know how to operate a set? Remember the old days when the motor-car man gave one driving lesson and let it go at that? Of course the present-day type of set, with simplified controls, looks so easy that it seems almost foolish to talk about training people to handle it. But the fact remains that plenty of women and some men are unable to master the complexities of a single dial until they are shown. They are afraid something may go wrong. If the set squeals they jump. Give them a little help in getting acquainted with it and you have made friends. Besides, you should instruct your customers very thoroughly how to connect up the batteries.

SEE THE SET.

Radio dealers should not attempt to diagnose troubles in customers' sets from verbal description. Usually such efforts go wrong, bringing loss of prestige. Moreover, the customer who comes in with some vague information about a set that is not performing is too often trying to get free advice when he ought to pay for an inspection. No good doctor attempts to prescribe without seeing the patient.

HONEST OPINIONS.

Do your customers ask your advice as to whether to buy batteries or eliminators, this set or that? It is a good sign when they do, but some radio men spoil the opportunity by "hedging." Give your customers the benefit of your honest opinion when they ask it. At the same time, be careful not to put your opinion in such form that it can be twisted into a promise of performance or a warranty of merchandise. Make it clear—in other words, that you are voicing your own views, based on experience and expert knowledge—nothing more.

AS THEY COME.

Speaking of handling customers, how many sales have been lost to radio dealers by the needless mistake of waiting on the wrong person first! It is human nature to resent having to wait while someone else who came later is served. Watch your front door when business begins to get brisk. Take them as they come.

WELL-PLACED SETS.

Have you ever stopped to consider that the location of a set or a loudspeaker in the average household has a great deal to do with the extent to which it will be used? When the matter of locating the installation is left to you put the set where it can conveniently be used during meals. Dinner-time brings the whole family together.

GOOD USE OF POSTERS.

Some radio shops at this season take on the most unattractive appearance growing out of the habit of hanging, tacking, and standing all around the place the miscellaneous posters, circulars, and other display matter provided by manufacturers. Such material has real value when used right, but when allowed to accumulate beyond reasonable limits it is about as attractive as a deserted barn covered with plug tobacco advertisements.

LOUDSPEAKERS.

This season has brought some real improvement in speakers. If in doubt about it, get out and compare some of the other lines with those you are handling. You will find that there is a very wide range, from very good to rather bad. Thus you can check up on what you are selling and determine whether your lines are representative of the best. There are good and bad cone loudspeakers just as there are excellent and poor horn-type loudspeakers.

TRASHY GOODS.

New Zealand radio trades, if they have any regard for their future success, should not stock anything "cheap and nasty." The sale of such an article may please the purchaser temporarily with the idea that he has got a bargain, but he will soon discover the thing is a dud and dear at any price. He won't come back to your shop.

EXHAUSTED BATTERIES.

Listeners, don't spoil your reception by using exhausted "B" batteries. A 45-volt "B" battery, which is down to 35 or 36 volts, has become useless, and should be discarded. Go to your nearest dealer and get two "heavy service" 45-volt "B" batteries. You will then be able to enjoy all the holiday broadcasting. It would be extremely disappointing to find your batteries run down and all the radio shops closed.

CLEAN THE BATTERIES.

A word to battery service station managers. Never let a battery go back to its owner with the terminals encrusted with sulphate and the top of the cells like a duck pond. I saw a battery delivered to its owner in that condition the other day, after it had been recharged at the service station. This sort of thing evidences carelessness or thoughtlessness. The owner of the battery is entitled to have it returned clean and free from liquid on the top outside.

SPARE VALVES HANDY.

Multivalve-set owners should always have a spare valve at hand. Valves, like motor tires, are subject to mishap, and it would be decidedly disconcerting to have guests present when one's set becomes crippled through one of the valves breaking down. This would be all the more unpleasant if it occurred during the holidays, when the radio shops are closed.

FLOOD LIGHTS.

Lighting and decoration play just as an important part in the merchandising of radio sets as does the music, and since all the music necessary can be obtained from the sets, play up the lighting and decorations. Some American dealers use flood lights equipped with colour shields in the display windows and the interior of the shop, playing them upon the best-looking consoles displayed.

ATTRACT ATTENTION.

Warm colours are essential in attracting attention, and these can be obtained in the display windows by equipping the flood lights with red, orange, or amber colour shields. In the interior floor and table lamps with coloured shades can be used in the arrangement of the display.

Again in the interior of the shop use more gay trimmings, or holly wreaths, and have the shop brightly and artistically decorated.

THE HOLIDAYS.

It's well to be ready for some extra demand for batteries, tubes, etc., to-day. How about a sign in the window? "Are your Batteries Ready for the Holidays?"

WHAT DO YOU STOCK?

No wise trader fails to stock any article that is in big demand even if there is not much profit in it. The writer was told by a radio dealer recently, "We don't stock that line. There's nothing in it. We don't think it's worth while handling." But the man around the corner did stock that particular line, and those who went there to buy it also purchased other accessories there. It is known that one dealer bought another right out of one line for his own shop because he found it brought other business with it. A knowing bird!

"FREE ENTERTAINMENT."

If you make a practice of home demonstrations, this is a good week to put on some extra pressure. But beware of people who want a little free entertainment to please their family or guests.

SATISFY THE CUSTOMER.

The president of one of America's largest radio-set manufacturing corporations says:—

"At Christmas time you can find out more readily than at any other time just how much your customer wishes to spend. Concentrate on the model nearest to that price; don't bother to tell him how it can be made cheaper or better. Later we may be able to sell this customer a more expensive set. But make him stick to one model at Christmas time. If you make him believe the selection of a radio set requires a lot of discrimination and judgment he is liable to delay the purchase until time is not so pressing, and a bird in the hand is worth more than two listening to the neighbours brag about their sets."

THE FINEST GIFT.

Radio dealers should remember that thousands of families regard a radio set as the finest possible Christmas gift. What can we do to stimulate this desire to the point of an actual purchase? What can we do to make a radio set easy and convenient to buy, and most important of all, what can we do to convince those who know nothing about radio that it is the most wonderful invention of to-day, and that it gives never-ending pleasure? And that a radio set is now as easy as a gramophone to manipulate.

Home Demonstration

A KNOTTY PROBLEM

Can a radio shop give trial demonstrations and make money? (writes Will Whitmore in the New York "Radio Merchandising"). This problem is just about as difficult as the service problem, and has been the cause for many radio dealers being visited by the sheriff. Every dealer has to answer it sooner or later, and the way he solves the problem has much to do with the ultimate success of his business.

The Texas Radio Syndicate of San Antonio, a retail radio shop in the heart of the quaint old Texas city, was confronted with the problem of trial demonstrations in the home. To-day its answer is, "Yes, a radio shop can give trial demonstrations and make money."

"Trial demonstrations are an abomination to any radio shop," declared Frank Davis, manager of the shop, "and we had just about reached the point where we could successfully refuse to give them, when our competitors began giving them on such a large scale it was impossible for us to refuse and still do much business. But giving trial demonstrations is one of the quickest and surest ways of losing money if it is not done carefully. We set about to do it carefully."

"To-day approximately ninety per cent. of our sales come from trial demonstrations in the home, and we are not losing money. The first rule of our trial demonstrations plan is not to leave any set in a home more than two nights, and we allow it to stay in a home two nights only on rare occasions, when static is bad or reception is poor from other unavoidable causes.

"We have found that the easiest way to lose a sale is to give a prospect too much rope. Leave a set in a home more than two nights and you can kiss your sale good-bye. We have found that the firmer you are with a prospect the easier it is to sell a set. Never seem too anxious to make a sale. We try to make the prospect ask us for a demonstration. Then he feels indebted to us, and it is less difficult to make the sale. On the other hand, if we press a man to allow us to make a demonstration he feels no responsibility towards us.

"The country is full of people looking for radio dealers who will make trial demonstrations, people who have no idea of buying. Unless the dealer is able to weed these people out from those who are actually desirous of buying a set, he will lose money just as surely as if he cuts prices. We have no set policy to weed out this class, but we are successful just the same. Our method is to find out first as much about the prospect as possible.

AVOIDING DEMONSTRATION HOUNDS.

"The first thing to find out is, has the prospect had demonstrations before? If he has had a number of other sets in his home, we know that he is merely a demonstration hound who has no idea of buying a set. When we find a man like this, we become all the more firm with him. We make him understand that if we give him a satisfactory demonstration, we will expect him to purchase the set. This eliminates the average prospect of this class.

"Next we always try to make the prospect decide on the type of set he wants before we make the demonstration. If he wants a set that requires an outside antenna, we attempt to install a permanent antenna for the demonstration. We charge \$3 for this service. We know that if a man is willing for us to make this permanent installation he has made up his mind to buy a set.

"However, very often even the earnest prospect will not agree to this installation charge. Again we grow firm, and stress the fact that we expect him to buy if the demonstration is satisfactory. When the earnest prospect clearly understands this, a sale is comparatively easy after a successful demonstration has been given him. The cardinal principle of trial demonstrations is not to be too anxious to give one. Let the prospect be anxious to have it.

SOURCES OF LIVE LEADS.

"Now, how do we go about getting demonstrations? We have from two to three salesmen who devote their entire time to outside work.

"These leads usually come from satisfied customers. When we install a set, we always call the new owner and ask him if the set is giving thorough satisfaction. This pleases the customer, to know that we are interested in him, but it has another advantage for us. We endeavour to get the names of the owner's friends who have seen and appreciated the set. These names afford excellent leads for new sales.

"Another source of leads comes from the trial demonstration itself, and this is one of the best advantages of trial demonstrations. Very often the prospect invites his friends to his house the night that we are making the demonstration. Quite often if the original prospect is satisfied with the set and purchases, his neighbour who is present to hear the demonstration will also buy a set at the same time. If he doesn't he is a good prospect for a demonstration in his own home.

"As to the actual demonstration itself, there is a definite technique and procedure to carry out. We always have a salesman at the home on the night of the demonstration who is in charge of the demonstration. This is absolutely imperative, we believe. If the salesman goes about the demonstration in the proper way he can create a desire of ownership in any prospect.

"Our salesmen first tune in stations themselves, in order to show the prospect the worth of the set, but the big idea is to let the prospect himself operate the set. Of course at first he does not have the same success as does the salesman. This makes the prospect decide to let the prospect himself operate the set efficiently. And when he sees that he can bring in a station with ease, he is proud of his own dexterity, and the pride of ownership begins to get in its work for the salesman.

Shop Phone 22—385.

Private Phone 25—010.

RADIO ENTHUSIASTS

THE MOST DEPENDABLE BATTERY THAT MONEY CAN BUY IS THE

EXIDE

As installed at the 2YA Station, Wellington.

We have Batteries in all sizes from 9/- each.

Exide Battery users: Have your Battery charged by Exide experts. Collection and Delivery Service Daily, City and Suburbs.

EXIDE SERVICE STATION,
79 KENT TERRACE, WELLINGTON.

If you want SHORT WAVE OUTFITS, COILS, CONDENSERS, CHOKES,

—you want BREMER TULLY PRODUCTS.

If you want FINE RESISTANCES, RHEOSTATS, JACKS, PLUGS, CONVENIENCE OUTLETS, for SPEAKER, BATTERY, AERIAL AND GROUND CONNECTIONS, in any ROOM, or AUTOMATIC CONTROL,

—you want YAXLEY PRODUCTS.

If you want PRECISION CONDENSERS for WAVE TRAPS, T.C. SPECIAL RECEIVERS, DOUBLE ROTOR COILS, R.F. CHOKES, 6-1 TRANSFORMERS, NEUTRALISING CONDENSERS, IMPEDANCE COUPLING UNITS, OUTPUT DEVICES.

—you want SAMSON PRODUCTS.

If you want A GOOD SPEAKER TO WORK OFF YOUR OWN CRYSTAL SET,

—you want A CLARITONE JUNIOR (Ashley Wireless Co.).

If you want THE BEST SETS OR PARTS that money can buy, ASSISTANCE, ADVICE or REPAIRS,

—you want

Mack's RADIO CO. LTD.
76-77 KENT TERRACE.

WELLINGTON.

(The House of Service), where the HIGHEST QUALITY GOODS are sold.

"HEAR HERE!" STIRTON'S

Music and Radio Store.
PETONE.

HUTT VALLEY AGENTS FOR:
CROSLY AND C. AND B.
BROWNING DRAKE SETS.
SERVICE AND SATISFACTION
GUARANTEED.

The CAMERA Coy.

OCTAGON, DUNEDIN.

The House For Satisfaction.

Have You Heard

PAGE RADIO?

This powerful Six-Valve Receiver is the machine you are looking for. For distance, selectivity and tone, it is unexcelled.

Prices from £16

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.

LITERARY MATTER.

All literary matter and contributions must be addressed to the Editor. If the return of M.S. is desired, enclose Id. stamp.

SUBSCRIPTION RATES.

Rate of Subscription: Single copies, 3d.; Annual Subscription (if booked), £2/6, post free; normal rate, cash in advance, 10/-. 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.
WELLINGTON.

WELLINGTON, DECEMBER, 30, 1927.

RETROSPECT OF THE YEAR'S BROADCASTING.

The year has been of the most outstanding and momentous character in relation to broadcasting. Remarkable progress has been made, and the future looms even brighter than ever.

The growth throughout the year has been so steady and sustained that, except for a deliberate casting back of the mind to the conditions of twelve months ago, it is difficult to picture in full review the real developments of the year. When the bells welcomed in 1927, 1YA was the only new and up-to-date station operating in New Zealand, and that station was itself of only four months' standing. In the New Year, however, 3YA was completed, and the end of January saw it on the way to attain a standard of transmission and excellence of programme that has made it a popular favourite.

After January, a few short months saw the fullest energy concentrated upon the construction of 2YA, and in July that station, the giant of the South, was opened with the pomp and eclat justified by the occasion.

From a constructional point of view, the achievement of the Broadcasting Company in building and opening these three up-to-date stations, and putting them on the air in less than twelve months, was an outstanding one.

END OF THE CONSTRUCTIONAL ERA.

The official opening of 2YA at the end of July may be said to have marked the climax of the constructional era of the company. It liberated the directing energy of the company from the construction of buildings and the installation of plant to the development of programmes and the

THE N.Z. RADIO RECORD.

Friday, December 30, 1927

SPORTING BROADCASTS

NEXT WEEK'S FEATURES.

The following is a list of the sports fixtures to be broadcast for the week ending January 7:—

1YA, January 2 and 3, Auckland Racing Club's meeting at Ellerslie.
3YA, January 2 and 3, Canterbury Park Trotting Club's meeting, at Addington.

EMPIRE BROADCASTS

BRITAIN'S NEW STATION.

Arrangements for the opening of the powerful short-wave station in Great Britain for conducting Empire broadcasting services were made so quietly that very few people in Great Britain or this part of the world knew how far advanced the work was. Engineers of the British Broadcasting Corporation announced two months ago that a short-wave station for Empire broadcasting would be built in Great Britain in time to be in operation by Christmas. Apparently the work on the station has been advanced in a manner which was never expected, and for the first time an Empire programme was transmitted on Armistice Day. Even now very little is known about the station which the Broadcasting Corporation used for transmitting that programme.

20,000 WATTS POWER.

The power used is said to be about 20 kilowatts, and the wave-length about 24 metres. There has been very little opportunity for preliminary testing, and few in the Antipodes have heard the experimental transmissions from the station. Those who have heard it, however, say that its signals are even louder and clearer than the signals from PCJJ. It is desirable, however, that listeners should bear in mind that perfection must not be expected from the outset. Much ground has yet to be covered before the great problems associated with long-distance transmissions are overcome. There is no question that regular and practically perfect Empire transmissions will ultimately be possible, but some years are likely to elapse before that time comes.

LECTURETTES

FROM 2YA.

On Monday, January 9, Mr. Archibald Sando, manager of "The Dominion," will conclude his interesting series of lecturettes on "The Romance of the Press." On this occasion Mr. Sando will touch on some of the humorous aspects of newspaper work and life. On January 2 Mr. Leonard A. Griffiths will talk to you about "Flower Legends from Greek History"; on the 3rd you will hear Mr. A. J. Dry tell of "The Early History of the Whaling Industry"; on the 5th Mr. Byron Brown will deliver another of his delightful lecturettes, with illustrative excerpts, on the works of Shakespeare; on the 16th Mr. Archibald Sando will deal with "The Romance of Radio"; on the 19th Mr. Stanley W. Fearn, A.R.I.B.A., will commence a series of lecturettes on "Architecture"; and on the 6th and 13th there will be the regular Friday evening talk on "Imperial Affairs."

GRAMOPHONE MUSIC

URGED IN AUSTRALIA.

The radio writer for the Melbourne "Argus" says: "Every listener will agree that some of the items now being produced by artists could very well be replaced by gramophone selections. Probably in Australia more than in Great Britain or the United States the broadcasting of a certain proportion of gramophone music is justified. Those who have criticised the programmes from the main stations have been forced to admit that it is sometimes difficult to obtain artists. Gramophone music of the better kind is now so good that it is strikingly like an original performance. This being so, the use of a gramophone makes it possible for the broadcasting companies to provide listeners with a kind of music which many of them would have no other opportunity of hearing. So long as the gramophone music broadcast is of first quality, and so long as too much of it is not provided in each programme, there can be no reasonable objection to it. It is when broadcasting companies begin to depend on gramophones for producing dance music and other programmes of the kind, which can be provided so much better by a studio orchestra, or to use the gramophone to avoid the engagement of satisfactory artists, that listeners are justified in complaining."

provision of the necessary administrative staffs. The reorganisation and elaboration of the programmes has since that time steadily proceeded, with the result that, musically, broadcasting in New Zealand now stands in an unchallenged position. Under the policy of the company of securing the best professional talent, there are now ranged round the microphones at the principal stations the very best artists available in the respective cities. These artists appear regularly, and thus derive the advantage of experience before the microphone and a steadily widening repertoire to meet the demand for variety.

DEVELOPMENT OF ADEQUATE PROGRAMMES.

The reorganisation of programmes on the basis indicated has just recently commenced, but has come opportunely to usher out the Old Year in a standard of attainment which augurs well for the dawn of the New Year. The significance of the encouragement of these high-class artists will not be lost on the music-loving public. Their encouragement demonstrates the sincerity of the policy laid down by the general manager, Mr. A. R. Harris, that the company intended to secure the best artists available. In this field it is to be noted that the Broadcasting Company is now the outstanding concert organiser of the Dominion, and offers a market for talent, musical and elocutionary, not hitherto available, that is bound to have its effect in the encouragement of the arts. Nightly now not less than 100,000 people enjoy the musical fare provided.

CHILDREN'S SESSIONS LEAD THE WORLD.

A feature of the programme reorganisation that has lately been undertaken is the diversity given to the children's sessions. In this field it is confidently believed that New Zealand leads the world. In no other country has the policy been developed so successfully of inducing the children to provide their own fare. With the joyous abandon of youthful enthusiasm, the children, wherever appealed to, have revelled in the opportunity of appearing before the microphone, and at each station the children's sessions have become a feature that indicates they are growing to be a centre of interest and charm.

SPORTS AND SERVICE RELAYS.

Outstanding developments have also taken place in the sports service provided by the company. Arrangements have consistently been made for procuring and broadcasting results of all important field events and, wherever possible, of describing those events while they are in progress. Football, racing, boxing, athletics and cycling have all been described. In this section some particularly long distance relay work has been done, notably in connection with the two Ranfurly Shield matches (one from Masterton and the other from Palmerston North). Another successful relay was that of the Maori concert, from Otaki to Wellington.

HISTORY MADE BY RE-BROADCASTING ENGLAND.

In addition to distant relays, popular attention has at times been concentrated upon successful re-broadcasts by New Zealand stations of one another or of overseas stations. The most outstanding event was unquestionably the successful re-broadcasting of 5SW, England, on the occasion of the Armistice Day celebrations. This was achieved by 3YA, and enabled crystal set users in Christchurch to have the unique experience of hearing speech and music delivered in England—a distance exactly half-way round the world. This is the limit of long-distance reception on this earth, and marks a distinctly creditable performance for the year's broadcasting in New Zealand.

CHAIN SYSTEM THE WORLD'S BEST.

In this general review of the situation of broadcasting in New Zealand, it is interesting to note that the system that has been adopted in New Zealand for the erection of a chain of stations, under one central control, and so placed as to cover the whole country, is the system which has been recommended for adoption by the Australian Royal Commission, and has been adopted in England by the British Broadcasting Corporation. It is also under discussion for adoption in America.

The important point to notice in this connection, however, is that New Zealand has been fortunately managed and regulated, in that it had no established conditions to clear away, but was able to start on a comparatively virgin field with a system that is recognised to be the ideal for efficient public service. Other countries are faced with the problem of clearing the ground before they can secure their desired end.

THE POLICY OF THE COMPANY AND ITS OUTCOME.

It is not out of place to mention finally in this general review that the Radio Broadcasting company throughout has avoided making specific promises as to the service to be given but, after laying down a general policy of the quality of service aimed at, has gone steadily ahead, giving the best service possible, commensurate with sound judgment and the income available.

That the efforts made to meet the public taste have been satisfactory is indicated most conclusively by the fact that each improvement in service has called forth an increasing tide of response from the public.

There has been no vacillation of policy, but each move has represented a steady driving forward to a higher level of efficiency, and in turn has met with an appreciative response from the public.

WHAT OF RADIO IN THE FUTURE?

What of the future? This brief review of the past, and the gleams it gives of the rapid progress of recent months, cannot but inspire hope and confidence. In a year the number of license-holders has risen from 14,541 to a figure only very slightly under 40,000. This growth has not been built on promises; it has been built on performance. The quality of the programmes which have been broadcast have attracted the public sufficiently to encourage their investment in radio. That has meant a very big turnover in business for the radio trade generally. Inasmuch as the 40,000 mark, good as it is, represents only approximately 15 per cent. of the homes of the Dominion, it is plain that 1928 should continue to be a good radio year. With a continuance of the same energy, initiative, and a capacity for service that have been displayed in the past twelve months, the succeeding year should witness steady and progressive growth and material enlargement of the radio circle.

ACT NOW!

YOURS FOR £5/10/- (Post Free).
Cosmos (British) Crystal Set, and high-grade 1-valve amplifier, complete with 45-volt B Battery, 4.5-volt A Battery, and 4.5-volt C Battery. Tested and guaranteed. Bought separately these cost:
Cosmos Set £1 5 0
Amplifier £5 0 0
Batteries £1 9 6
£7 14 6

Send Money Order.
Save £2 and get an all-British Set.
POSTAL RADIO,
Box 1315,
WELLINGTON.

BREMER-TULLY

Six and Eight-Valve Receivers.

The Best and Most Sensitive Set Money can Buy.

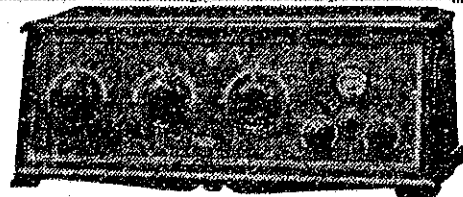
GILFILLAN FIVES AND SIXES.

A reasonably priced set of good quality.

The largest and best assortment of Radio requirements in Otago.

From the Otago Agents:

Barnett's Radio Supplies
OCTAGON : : DUNEDIN.



King in Radio

Browning Drake Sets,
made up to order.
From £8/5/-.

NEW ZEALAND CIRCUIT SETS From £5
KING 5-VALVE NEUTRODYNE £36/10/-
Nothing Else to Buy.
CRYSTAL SETS, 10/6 One-valve Amplifier, including Batteries, Loud
Speaker and Crystal Set £4/19/6
RADIO HOUSE, 'PHONE 41-446.

F. J. W. Fear & Co. 63 Willis Street, Wellington

RADIO UPKEEP

HAVE YOU SUMMED UP THE UPKEEP FOR RADIO FOR 1927?

If you own a powerful 5 or 6-valve set, you have probably paid out from £5 to £10 for "B" Batteries alone, and even now are contemplating new ones, but STOP—why such a needless annual expense when you can save money by purchasing

WILLARD RECHARGEABLE B BATTERIES

Willard Batteries are built for years of service. Inspect the two in our shop window—these have been hard-worked for four years—and are still class "Fit A."

Thos. Ballinger & Co. Ltd.

58-62 VICTORIA STREET, : : WELLINGTON.
"Where the Quality Goods are Sold."

The Multi-Valve Receiver

Little Alteration Probable

RECEIVING AUSTRALIAN PROGRAMMES.

Dealers have recently been inundated with requests for assistance where owners of five-valve sets have been unable to hear Australia. In this article "M.I.R.E." shows why such reception is difficult at present, and indicates the improvement which may be expected as the summer advances, and the longer evenings bring about better reception conditions. At present, owing to daylight saving, there is a difference of two and a half hours between New Zealand and Australian time, this making conditions very difficult for the receiving set. Failure to receive Australia at present does not indicate any fault on the part of the set.

from Present Type

(By M.I.R.E.)

THE THREE-DIAL RECEIVER.

There have been no revolutionary alterations to multi-valve receivers during the last year, although minor improvements tending towards greater simplicity in operation have been effected. The three-dial receiver is still the standard, and the public can rest assured that there is little likelihood of radical change as far as the average-priced set is concerned. It should be emphasised that single dial control, while undoubtedly giving more simple operation, does not increase the efficiency of the set. It is highly improbable that there will be any big price reductions within the next few months, and prospective buyers cannot therefore do better than purchase now. They will save money, for the effect of the recently-increased duties will be to raise the cost of multi-valve sets.

OWING to the Christmas season and the consequent intense buying activities of the public, it has been necessary to break away from the programme laid down for this column and deal briefly with the purchase and operation of crystal and small valve sets, owing to their popularity amongst the majority of this month's shoppers.

This week it is accordingly proposed to pick up the threads of the original discussion and revert to points of interest in connection with receivers of a general multi-valve design, and sets having three valves or more will be the consequent centre of interest. The attention of prospective purchasers who are considering an early decision to buy in January is especially directed to the subject matter of this discourse.

SUMMER RECEPTION.

First of all the trade are being inundated just now in the service calls as a result of a complete failure of the average five-valve set to bring in Australian stations. It should be realised that in mid-summer nothing but the most powerful equipment will accomplish this at this time of the year, where the receiving locality is average or below the average, in its receptivity. This is very largely because New Zealand is two hours and a half ahead of the eastern States of Australia, owing to daylight saving. The 8 p.m. programme from Australia, therefore, commences at 10.30 p.m. New Zealand summer time, and at 8 p.m. in Sydney or Melbourne the sun has scarcely set, and it is still comparatively daylight across the Tasman Sea. It is generally understood by laymen that radio signals on standard broadcast wave-length carry infinitely better during the night than the day, this phenomenon being due to a damping effect on daylight transmissions primarily due to the presence of the rays from the sun.

Under ordinary circumstances summer time is not a suitable season to expect distance searching to yield much satisfaction, but with another hour of daylight signals to the west are that much worse off, while those coming from the east, although that much better off, are still at the disadvantage of the adverse seasonal conditions.

LONGER EVENINGS.

If a multi-valve set has apparently been gradually becoming less sensitive, do not attribute it to anything else than a gradual falling off in actual signal strength unless in possession of other

facts which would seem to definitely point to trouble. The longest day was experienced on the 21st of this month, and the days will be commencing to get shorter from now on, with a corresponding increase of signal strength (both during the day as well as at night, but principally the latter) as the sun moves further north again.

Set owners are, therefore, assured that there is no necessity to imagine that the set is a dud, and is wearing out, or that something equally alarming is in the air, but give the dealer or service man an opportunity to discuss things over the telephone for instance before dragging him out on a fruitless and (to him) expensive quest. If you think the set requires a look-over, then be prepared to defray his expenses and time, and it will be found a good investment, because the dealer will always be found an invaluable help in keeping the equipment not only in good order and condition and working up to "concert pitch," but also equipped with all the latest fittings of interest and benefit to the set-owner.

Now, with regard to multi-valve receivers, it is proposed to discuss in a purely popular and general fashion the main types in service on the New Zealand market to-day.

MULTI-VALVE TYPES.

All multi-valve receivers take relatively the same theoretical form, and consist of an aerial tuning device attached to a valve, and then either more stages of valves with intervening coupling arrangements for tuning purposes, or else with small sets, a detector valve, followed by further amplification of the "detected" or audible electrical effects. These latter consist of at least one, but usually two, stages, and sometimes three stages, of "audio" amplification.

This sounds complicated, but is not if the reader will simply imagine a row of gadgets and picture to himself first the aerial, aerial tuning controlled by a dial, next a valve, then another tuning arrangement, another valve, another tuning arrangement, then the detector valve, next a coupling "audio" transformer, another valve, another audio transformer, then the final valve (usually a "power" type), and lastly the sound reproducer or loudspeaker. Such a receiver represents a standard five-valve set, and may be accepted as a standard design on the New Zealand market. Up till a few months back the three tuning arrangements in this receiver were independently controlled by separate dials, and for a long time the most familiar mental picture of a

radio set carried in the minds of the public consisted of a cabinet with a black panel in front, 3 dials, and a couple of small knobs for control purposes. Later designs of receivers have now arrived, with one or two controls operating all the tuning arrangements simultaneously, and the controls are small knobs turning handsomely engraved drums, having figured calibrations which show through a window and are sometimes illuminated by a lamp.

TECHNICAL EFFICIENCY.

So far as technical efficiency is concerned, this new departure is a questionable improvement. Ease of tuning is undoubted, but engineers are very much of the opinion that had the original designs been adhered to, costs of production would have been so reduced as to bring a multi-valve receiver of really reliable manufacture and good quality performance, within the reach of the average buyer. It is very nice to be able to go to a set and twist two knobs to a certain position in order to tune in a certain station. It was just as easy to get the same station with the older method, once the station was picked up and the dial settings recorded.

The new style is undeniably handsome, but it is a fashion in the main, and that is the sum total of it. These remarks are being frankly penned in support and defence of the many thousands of sets in commission to-day in New Zealand of the older design. Users of this equipment are getting the impression that their sets are obsolete and are not as efficient as the newer models. This is definitely not the case. The writer is an avowed three dial set-owner, and can assure three dial set-owners that he does not intend to part with his own equipment of the same design until something more revolutionary than the present fashion comes along. Sets

of three or four years ago rewired slightly to take a power valve in the last stage are all that is required, and their performance leaves very little to be desired.

There are many makes of receivers of the typical three-dial variety still being sold. A lot of these can be obtained at a lower price than the standard retail price, because owing to the change in fashion the dealers are quitting their stocks. Prospective purchasers should have no hesitation in taking advantage of this condition of affairs to get a multi-valve set. Once again, however, it is necessary to warn prospective purchasers only to buy sets of standard recognised makes, so that service and spare parts will be readily obtainable through the dealers from main distributors or manufacturers. An older style of set of a make selling readily and well known on the market to-day is quite a safe proposition.

"SHIELDING."

A question which exercises the minds of many people to-day is the exact use of "shielding" or the placing of sheet-metal round individual stages of radio-frequency amplification in such a way as to completely envelope the complete stage. Shielding was primarily introduced for the purpose of preventing out-of-balance effects between successive stages of amplification when the orthodox five-valve set of last year (previously described in this article) was increased to 6 or more valves, necessitating 4 or more stages of tuning. For technical reasons, in order to still maintain relative simplicity of control, with multiple stages, shielding was introduced and immediately became the fashion, with the result that an erroneous impression has got abroad that no set is complete without it. For six or more valves this impres-

sion is well founded, but for five or less valves it is wrong. All manner of wonderful things are attributed to shielding incidentally, and most of them are purely mythical or merely sales talk. Actually shielding causes inefficiencies which are only warranted in six (or more) valve designs because more is gained in the end through the ability to use more valves with stability of operation and thus obtain a greater ultimate amplification. With five valves or less total shielding causes the same inefficiencies, and these outweigh anything picked up by virtue of shielding having other virtues.

TREND OF DESIGN.

This discussion must not be misconstrued into an attack on the present developments in receiver design. The trend of development is inevitably towards shielded simply-controlled models having an appearance of a gramophone or article of furniture and adaptable to power socket operation. There is every reason from a technical, as well as a commercial standpoint, for the introduction of these principles. It is just a pity that the price of such equipments will be higher than models of six months or a year ago, because a five-valve set on an average aerial certainly gave satisfaction even to distance fiends.

Christmas shopping is now over and New Year purchases are being made. Take advantage therefore of the circumstances disclosed in this discussion to become numbered among the multi-valve users, bearing in mind the fact that there are many sets still available which were landed just prior to the recently-announced tariff regulations, and that once these are sold, the selling price of newer models will be vastly increased if only because of increased duties.

EXHAUSTED VALVES

HOW TO REVIVE THEM.

A common cause of failure in modern wireless receivers, and one which the average listener seldom suspects, is the failure of the valves (writes "3BD" in the Melbourne "Argus"). A few days ago a friend asked me to look at his set to see why it was not working. After making an extensive examination of all the equipment, and testing all the batteries, I subjected the valves to a test and found that the filaments of several of them were exhausted. Although the dull emitter types of valves have practically revolutionised wireless reception in the last few years, they are subject to the insidious trouble of filament exhaustion without the filament actually breaking or "burning out." The operation of the dull-emitter valve depends on the inclusion in the filament of some substance—usually the element thorium—which possesses, to a minor degree, the essential properties of radium. The presence of this substance in the filament will cause it to emit a dense cloud of electrons, which are the electrical units conveying the current through the valve between the plate and the filament at a much lower temperature than that at which an ordinary untreated filament will produce an electron cloud of equal density.

SHORT-WAVE BROADCASTS

ENGLISH INDIFFERENCE.

A Melbourne radio writer says:—"One cannot help feeling that the success so far achieved from the British Broadcasting Corporation's short-wave broadcast station 6SW was distasteful to the British Broadcasting Corporation. His conviction is made stronger by the half-hearted efforts which have been made in Great Britain to relay Australian programmes, and by the fact that one of the finest programmes from 2PC, Sydney, which has ever been relayed in Great Britain was cut off in the middle on the pretext that it was fading. Until the problem of establishing an Empire service is approached with a little more courage and enthusiasm by the British Broadcasting Corporation Australian listeners cannot expect much success in the relaying of British programmes from local stations. In contrast to the stand of the British Broadcasting Corporation, it is interesting to note that extensive improvements and extensions are now being made to the Dutch station PCJJ, owned and operated by the Philips Co. It is reported that the station will be working again

shortly, and that extensive experiments on many different wave lengths will be begun at once. Moreover, an entirely new station for PCJJ, which will be far more powerful than the present one, is being built, and it should be working in May, in time for relaying in the winter from Australian stations.

MAN-POWER SIGNALS

FROM AUSTRALIAN INTERIOR.

Progress towards the solution of the problem of providing effective communication between isolated points in the interior of Australia and more settled areas is promised by the new wireless equipment which has been designed for the Australian Inland Mission authorities. The development of short-wave communication a few years ago provided the key to much progress in inland communication, because short-wave equipment will give good service with much less power than is required to cover the same distances using an older long-wave station. So far, however, difficulty has been experienced in producing a practicable power plant for short-wave transmitters for use in the

interior. The method now being adopted is to use man power to work the sets, a small high-tension generator, driven by suitable hand-turned gear being employed. Where plenty of native labour should be available, this method seems quite an effective one. It is by no means new, as similar equipment was used for military purposes before the war. In those days it was found that a more suitable arrangement than the hand-operated generator was a generator attached to a frame resembling a bicycle frame, and operated by pedals. Not only was this system less of a strain on the person operating it, but it was found possible to use more powerful equipment and to obtain a steadier current output when the bicycle-frame generator was used.

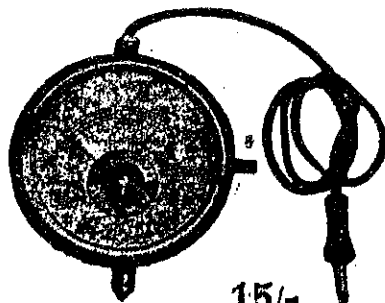
The fourth edition of Scott's annual Radio Handbook is to hand. The publication embraces a wide range of useful information to broadcast listeners, amateur transmitters, and others interested in radio. There are circuit diagrams of the most popular design and constructional details, which should make a strong appeal to home-builders.

SOLE CANTERBURY AGENT:

ATWATER KENT

H. C. URLWIN

200 Manchester Street :: CHRISTCHURCH.
CALL DURING CARNIVAL WEEK.
Free demonstration arranged in your own home.
'PHONE 4778.



DON'T GUESS! BE SURE!
USE A BATTERY VOLTMETER.

Buy BRITISH Goods!

Agent for:

FERRANTI TRANSFORMERS
FORMO COMPONENTS.
DUBILIER GOODS.
T.C.C. CONDENSERS.

A. E. STRANGE

404 Worcester Street,
CHRISTCHURCH.
Telephone 5164.

Ocean Deep Tone!

Arrange for a demonstration, and marvel at the wonderful depth of tone of the SONORA. It will surprise you.

RADIO Sonora RADIO
F. J. Pinny Ltd. 58 Willis Street WELLINGTON.

Announcing — RALEIGH RADIO RECEIVERS

THEY ARE ALL-BRITISH

It gives us great pleasure to present to the Radio World, a British Set built by the largest Radio Manufacturers in the British Empire. Raleigh employs the newest developments in Radio Design, and its economy, and workmanship are truly up to traditional British standard.

You Will be Greatly Impressed with the Raleigh
— Models now on View at the Raleigh Dealers —

THE L. H. WRIGHT CO.
Authorised Raleigh Dealers

153 Willis St. [Opp. Y.M.C.A.] Wellington. Phone 23-147

From the Woman's Point of View.

By VERITY.

TO-DAY AND TO-MORROW

A Revolutionary Change.

Broadcasting at once lifts music out of the concert hall into the auditorium of extraction. It is a tremendous change—a revolutionary one. Music at once is made blind, and the ears are accordingly sharpened. The ear either has to work or frankly abandon the task. If it is lazy it no longer has props to lean upon. If it lags it is the fault of the ear alone—or the music. That is the revolution. Unseen music must live by its own merits. Broadcasting has done more to recapture honour from the performance and bestow it on the composition than perhaps any agency since music was first created.

—Raymond Swing.

A Useful Sweet.

Cut some neat squares of white bread, or else scraps, 2ins. square; soak them in milk. Make a good liquid toffee: ½lb. butter, 2oz. brown sugar, 2 tablespoonsful golden syrup. Generous squeeze of lemon juice. When turning brown put the bread squares in toffee and pile them neatly on a hot dish. Pour over the remaining toffee. Serve very hot, with whipped cream. Children love it. Men always ask for second helpings. Quickly and easily made it is most useful as an emergency dish, and, unlike most puddings, it does not suffer from reheating.

A Breakfast Dish.

A tasty little dish to be eaten with the breakfast bacon, and quickly accomplished. Place some self-raising flour in a breakfast cup, stir in sufficient cold milk to make a mixture of the consistency of thick cream, and a pinch of salt. Then drop the mixture, a teaspoonful at a time, into the hot frying-pan after the bacon has been cooked. Each portion of the mixture will immediately foam into a circular patty, and will rise very quickly. Turn each patty over as it becomes browned, so that both sides may be properly cooked.

Lighter Omelettes.

When making an omelette, adding a few drops of water instead of milk makes the omelette lighter.

An Easy Way to Peel Apples.

Pour scalding water over the apples and then the skins may easily be slipped off and much labour and waste saved.

Luxuries.

A certain man, as well-known for his extreme meanness as for his wealth, drove up hurriedly in his car one day to the door of a celebrated doctor. He was in a state of acute discomfort and fear as a piece of fishbone was sticking somewhere in the region of his throat. The doctor speedily removed the obstacle, and the man breathed freely. "Thank you, doctor," he exclaimed, much relieved. "I'll never eat salmon again, never. And with what ease you removed it—a mere minute's operation, was it not? How much—ah—what is your fee?" "Half-a-guinea," answered the doctor. "Half-a-guinea," echoed the other, "for half a minute's work? Impossible!" "But consider," said the doctor, "a salmon bone." "What has that got to do with it?" inquired the patient. "Oh, a great deal," replied the doctor with a twinkle in his eye. "Had it been halibut or fresh haddock I should have charged less—perhaps five shillings; cod-fish, half-a-crown would have been sufficient; mackerel two shillings; while a herring-bone I might even have removed free of charge, but salmon at this time of the year—well, really, sir, one has to pay for these luxuries." And his patient paid.

The Art of Broadcast Drama.

Wireless drama is becoming increasingly popular in England. A new field of opportunity and endeavour has presented itself with the advent of radio, bringing hope to many playwrights of talent, even of genius, who since the war have been hard put to it to find a market for their wares. Drama is entering upon a new phase, which is the beginning of a new vitality. Radio is rendering this aid to drama because of its power of penetration which is practically omnipotent. We witness every day the miracle of the mountain moving to Mahomet. It is difficult to get people to attend drama; very well, through radio the theatre is taken to them! And so through the ether the spirit of drama is going to reach the fireside of almost every home. What scope is here, what a chance, what golden opportunity! With so wide an appeal it cannot fail to gain more and more recruits who love the ancient art. It means the introduction of a new and vigorous spirit that was so sorely needed. Wireless is the hope of modern drama.

—Dame Madge Kendal.

Gilbert as Prophet.

The popularity of community singing calls to mind an amusing record of the late Sir W. S. Gilbert's power of foretelling the future, which is evidence of his seership, but not of the justness of his conclusions. Forty years ago, long ere our ears were gladdened by community singing, he wrote the following scrap of dialogue in "Ruddigore":—

Mad Margaret: "But see, they come—Sir Despard and his evil crew! Hide, hide—they are all mad—quite mad!"
Rose: "What makes you think that?"
Mad Margaret: "Hush! They sing choruses in public. That's made enough, I think!"
Comment would be, in every sense of the word, impertinent.

A Jam and Apple Secret.

If a jam pan has a very little butter rubbed over it before cooking jam it will never burn.
It is not always known that apples cook very much more quickly without sugar. They are quickly reduced to a foamy mass, so much desired for many dishes, and the sugar can be added afterwards. Sugar hardens the apples when cooked with them.

CHRISTMAS EVE

By Catherine Parmenter.

*Pine-crowns' hills against the sky,
Kneeling low to pray;
Friendly, lamp-lit villages
Along the snow-bound way;
Myriads of silver stars
Gleaming softly bright . . .
Little Inn of Bethlehem,
I see Thy star to-night!*

*Fragrant wreaths and candle glow
In a city street;
Songs of Christmas carolers
High and clear and sweet—
Echoes of the angel host,
With wings of shining white . . .
Little King of Israel,
I hear Thy song to-night!*

*Words of ancient prophecy
Are mine to take or leave;
Visions of a golden age
This happy Christmas Eve;
Peace on earth, good-will to men—
Oh, dim and holy light! . . .
Little King of all the world,
I share Thy dream to-night!*

TO-DAY AND TO-MORROW

Cadet "Howlers."

An English naval schoolmaster provides these "howlers" of young students in a Divinity examination:—
"Moses sent ten plagues to Pharaoh. The last one was children, so he drowned them all in the Red Sea."
"We remember Jonah because it was through him that the idea of the submarine occurred to modern minds."
"When David slew Goliath with a catapult the age of missile warfare commenced. This incident drove the first nail into the coffin of feudalism."
"The Queen of Sheba was the only woman of his day that King Solomon never married. Hence arose the phrase, 'The wisdom of Solomon.'"
"Zadok was the name of an ointment much used in olden times. On the alabaster box in which it was packed was printed in Hebrew characters, 'Rub it in.'"
"Shimei was fined the maximum penalty by David for spitting in public."

Cream Cheese Without Cream.

Take ½ pint lukewarm water; pour into a basin with a pinch of salt and a small teaspoonful of rennet. When set place in muslin, tie up and hang it to drain. When firm, make up into a small shape and press.

Spinsters of Science.

The decision of London University to grant the degree of B.Sc. to ladies who qualify in domestic and household science was a very wise one. Everything conducive to the proper management and administration of the home is embraced in the curriculum, and the "sweet girl graduate" who emerges successfully from the examination room is able to boast a variety of domestic knowledge before which even the once formidable Mrs. Beeton must pale her now ineffectual fires.

Time was when the marrying man looked askance at the spinster B.Sc. He had every confidence in her ability to solve an obscure hydro-carbon, but could she make edible pastry? He never doubted that she could give correctly, to five places of decimals, the co-efficient of expansion of tungsten, but did she know just how long to boil a potato? He quite appreciated the fact that she could tell at a glance the spectrum of sodium from that of potassium, but could she differentiate with equal certainty between Dorset and Danish?

But now he will look upon the "lady of high degree" with all such doubts removed. With her mental equipment she can be trusted to run anything. Happy will he be if he can espouse her! Never will be experience the sensation of the city-weary husband, engrossed with his after-dinner Corona and novel, being suddenly pounced upon to solve those acute mathematical problems which are usually associated with doing the house-keeping accounts; or to explain the difference between a cheque to "bearer" and a cheque to "order"; or to cope with a refractory kitchen chimney which has suddenly developed a "down" draught. All these little problems will have already been successfully tackled in the University, and the wisely scientist will be fully competent to function unaided at these great climacterics.

Yet, in spite of her specialised training, it seems safe to predict that she still jumps on a chair when a mouse runs across the room!

For Lovers of Verse.

A new book of verse by Humbert Wolfe will make a direct and sure appeal to all lovers of Peter Pan and his home—Kensington Gardens, the latter being the designation under which these charming poems from the pen of an exquisite craftsman are launched. They are fraught with the gaiety of blossoms and the gravity of gems. The Laburnum, the "good as gold tree," is thus presented:

Laburnum hangs her golden fleece
Through a thousand lattices
In the silken fleeces caught
Struggles spring, the Argonaut.

Peter Pan is called: "a faun of gingerbread," while the song of the well-drilled Tulip says:
The craftsman, who carved her of
metal prayed:
"Live, oh thou lovely!"
Half-metal she stayed.

A sermon is found in the carved stone of "The Albert Memorial":
"In his heavy monument
Good Prince Albert sits all bent.
Even death could not assuage
The burden of his golden cage."
And so through the pleasanties of the Gardens the reader is charmingly and willingly led.

A Fishing Yarn.

An old resident of an English fishing village used to go out as attendant to gentlemen during the fishing season. "I were out with the Bishop yesterday," he said to an employer one day, referring to a very well-known and popular dignity of the Church, who is also a good fisherman. "Indeed," replied the other; "he's a jolly good man." "Well," continued the old fellow, "e may be, but e do swear a bit when 'e's fishin'." "Oh, nonsense!" said his employer, "I don't believe it." "Well," said the old man, nodding his head wisely, "I'll gie 'ee an instance. I was standing 'longside o' the Bishop, same as I might be aside o' you, and 'e'd got a big fellow at the end of 'is line that was pretty nigh pullin' 'im off 'is feet, and I turns to 'is Lordship and I says, 'E pulls durned 'ard, don't e?' and the Bishop says, 'Yes, 'e do.' Well, now, ain't that swearin'?"

Devonshire Apple Cake.

Beat 1oz. of butter and 1oz. of sugar to a cream, add one large grated apple, one egg, and a breakfastcup of flour. If not moist enough, add a little cold water. Bake in a hot oven for half an hour, and serve hot for tea.

Short of Milk.

When friends look in unexpectedly in the evening and you want to offer them coffee, but are short of milk, just beat up an egg, put a small portion into each cup, and pour coffee on to it. It is delicious.

Salted Almonds.

½lb. Jordan almonds, 3oz. butter, 2 tablespoons salt.
Method: Blanch the almonds, melt butter in a pan, add salt, then put in almonds, and allow to cook slowly till a nice golden brown and perfectly crisp. Turn on to a pastry tray and dust with salt. Keep quite airtight.

The Letters of Annabel Lee

My dear Elisabeth,

At fashion shows in London, they make a special showing of frocks from three to four guineas, all of one price, and paraded by pretty mannequins. An excellent idea, isn't it, doing away with all necessity for making pertinent inquiry as to the burning question of cost, perhaps to be answered with a lofty "Fifteen and a half guineas, moddam, for this Little Model Gown. So useful for the mawnings!" Dress designing must be a pleasant and profitable occupation, one would think, and not difficult in these days of simplicity of line and beauty of colouring and fabric. How clever with her clothes is the svelte and capable daughter of to-day. In fact, whatsoever her hand findeth to do she does rather well. But the eyes of youth do not pore much over books, the Oxford Book of Verse is an unknown territory, and the Best Short Stories for 1927 as though they were not. But for ingenuity in heightening her attractiveness from the pictorial point of view and capability in matters domestic, she is hard to beat.

One charming frock lately appearing on the Quay had flame-coloured roses on softly floating skirt panels, the jumperish "body" being of that lovely tint that is not apricot or biscuit or sand, but a blending of all three. One girl with a fair, round face and honey-coloured hair, did her holiday marketing in an immaculate coat of black, with slashes of scarlet suede; that "inverted dome" she called a hat being of an Egyptian swarthy hue and fitted her head as tightly as though it had been gummed on, while two lank, flat feathers, one on each side, clung closely to her radiant cheek. Quite an amusing hat this, and vastly suited to its plucky wearer. By the way, have you tried Xantha? It is an artificial silk, very sheer and shining and chic, it does not ladder, it does not drop, and its colours do not come out in the wash. All of which great and good qualities render it eminently suitable for princess petticoats, and even more intimate garments. One is growing a little tired of the Shingle Ubiquitous, and the same-

ness of the sweetly slender maidens of the mode. Perhaps when the New Year has grown old, and gone the way of all years, we shall be braiding our Titian locks, or stringing them with bands of rosy hue, like the obedient maiden when her mother bade her bind her hair in the days when to be filial was to be in the fashion.

In "Young Men in Love," Mr. Michael Arlen is very glib and diverting, setting forth in his charming prose the vagaries of more of his lovely and bedworthy (his adjective, not mine) ladies, whom, obviously, we are expected to find of a charm quite ravishing, no matter how the conventions are torn to shreds. Lately I saw one of his stories adapted to the screen, "The Ace of Cads" being most effectively acted by the accomplished Frenchman, Adolphe Menjou, that suave fellow, as the daily press has it, whom easy sophistication and insolent poise of a consummate man of the world never fail to interest and intrigue.

For a real thriller for lazy summer days, I recommend to you "No Other Tiger," by that clever teller of tales, Mr. A. E. W. Mason. The story rushes along breathlessly, the Bad Man being a veritable creation, and the plot and denouement of extreme interest and originality. In another vein, and of exceeding gracefulness of expression and spontaneous sincerity, is "The Rustle of Spring," by Clare Cameron. This is a chronicle of the mind and soul of a girl child amid sordid surroundings. Gradually her dormant awareness of beauty and nature, spirit and human achievement is awakened, and her quickening response to whatsoever things are lovely traced with delightful sureness of touch and comprehension of the sensitive reticence of youth. An unusual story, and a charming one.

Why not send for "Disraeli," by Andre Maurois? You already have his "Ariel," the beguiling romance based upon the career of the poet Shelley, that charming and unstable genius who showed such remarkable catholicity in his domestic affections. Do you remember how he joined the

luncheon party after bathing, having forgotten to resume the garments of civilisation? The guests were slightly disconcerted, but the erratic dreamer of dreams in no wise perturbed. Perhaps he was better built than some of us!

At the moment things are quiet, everyone has finished buying, and for the nonce the shops may as well put up their shutters. We have reached "peace after storm, port after stormy seas," the lull between one tempest and the next. What a strange and lovely serenity descends upon the social whirligig when in the churches, on Christmas morning, are sung once more the old, old hymns, the light filters through stained glass, the peace that passes all understanding sinks into the soul, and we think of friends who are real and true and wish them good luck in the name of the Lord. For the poor, the sick and the sad, it may be the New Year will bring a happier dawning; and if it happens that our own luck is out, as is highly probable, the fame and fortune tarry long, there is consolation in the quaint old lines:

He that is down, needs fear no fall,
He that is low, no pride;
He that is humble, ever shall
Have God to be his guide.

And so we go on hoping that the sun will shine, and we'll get there in the morning, as is cheerily chuckled, or something like it, by one of those strange stringers of doggerel who abound in America.

The clocks are chiming the lateness of the hour; boats and trains are to be wrestled with in the near future; into the small, but not too small suitcase are to be pushed the fewest possible number of frocks and frills compatible with something suitable and any and every occasion. And so, my Elisabeth, with good wishes to your household, particularly the "orchestral accompaniment of children" (as the Countess of Oxford neatly puts it), I must hasten away, hoping you will "hold me in your heart of hearts, as I do thee, Horatio." Your

ANNABEL LEE.

THE KING

"My little Son," she said, "My little Son,
My beautiful, my wondrous Lovely One,
I kiss thy head, thy hands, thy little feet;
Thou art so small, so helpless, and so sweet.

"They come with gifts and look on thee with awe,
And tell in whispers of the Star they saw.
I see but thee . . . I know no more than this,
That thou art soft as rose leaves to my kiss."

German Biscuits.

½lb. flour, ½ teaspoon baking powder, ½lb. sugar, ½lb. butter, 2 eggs, 1 tablespoon jam, Primrose icing, 3oz. sifted icing sugar, 2 tablespoons lemon juice, little liquid saffron, little water if necessary.
Method: Put flour and sugar into a bowl, rub in the butter, add baking powder, and mix to a stiff paste with the eggs. Roll out and cut into rounds with a plain cutter. Bake in a slow oven, and when cooked spread one with jam and place another on the top. Mix the icing sugar with the lemon and water, and, if liked, add a little liquid saffron. Spread over the biscuits and allow to set before serving.

Extracts from an R.B.C.'s Mail Bag.
"We know we are not the cause of the interference as we have a private earth."

Some Features of Next Week's Programmes

NOTES FROM 1YA

"IN A PERSIAN GARDEN."

Liza Lehmann's famous song cycle, "In a Persian Garden," embracing many of the cryptic and trite verses of Omar Khayyam, will be rendered by the Waiata Quartet on Tuesday evening. The personnel of this quartet is: Mrs. Cyril Towsey, Miss Lola Solomon, Messrs. F. Sutherland and James Simpson.

During the latter half of Tuesday's programme, two sketches which have been specially written for Radio will be performed. These sketches are entitled "The Stranger" and "Stung," and they will be accompanied by realistic effects. The performers will be Miss Edna Smeaton (a well-known elocutionist) and Messrs. P. Adeane and J. Sharp, both of whom are prize-winners at competitions and leading spirits in the well-known Thespians.

Mr. B. Tregilgas, bandmaster of the Auckland Artillery Band, and a cornet soloist of renown, will be playing at 1YA on Tuesday evening.

The Ariel Quartet (composed of Miss Deryl Smith, Miss A. Dellore, Mr. J. Dellore and Mr. M. Balance) will make its first appearance on Wednesday. Miss Smith, as a member of the Orpheus Quartet, is already a favourite with 1YA listeners. Miss A. Dellore is new to radio, but should prove a most popular soprano. Mr. Balance is a well-known basso. He earned distinction for the way he enacted the role of "Tutankhamen" in the Auckland production of that name. Among the items chosen by the quartet, and by the individual members, are a number of songs from popular operas.

The entertainment for this evening should be specially enjoyable, for apart from the songs by the members of the quartet, the Bosworth-Hemus-Towsey Trio will be contributing, and the Hawaiian instrumentalists will wait across the ether sweet memories of Hawaii.

There will also be appearing Miss Lynda Murphy in humorous sketches. Miss Murphy is the talented young lady who distinguished herself in the Auckland production of Shaw's "Pygmalion."

Miss Mina Caldwell, Miss Christine Ormiston, Mr. Birrell O'Malley and Mr. Dudley Wrathall (the last-named taking the place of Mr. Barry Coney during his absence from Auckland), will form the Premiere Quartet which will supply the bulk of the programme on Thursday evening. Quartettes which will be sung will be the charming "The Venetian Boatmen's

Evening Song," and the equally melodious "Stars of the Summer Night."

Mr. Allan McElwain, one of the best humorists in Auckland, will hold the floor for some time on Thursday evening.

The first of a series of twelve lectures on New Zealand by Mr. A. B. Chappell, M.A., will be given on Thursday evening. It will be entitled: "The Days Before Discovery."

Associated with the popular St. Andrew's Quartet on Friday night—and their presence alone ensures an enjoyable evening's entertainment—will be

NOTES FROM 2YA

ORPHEUS QUARTET.

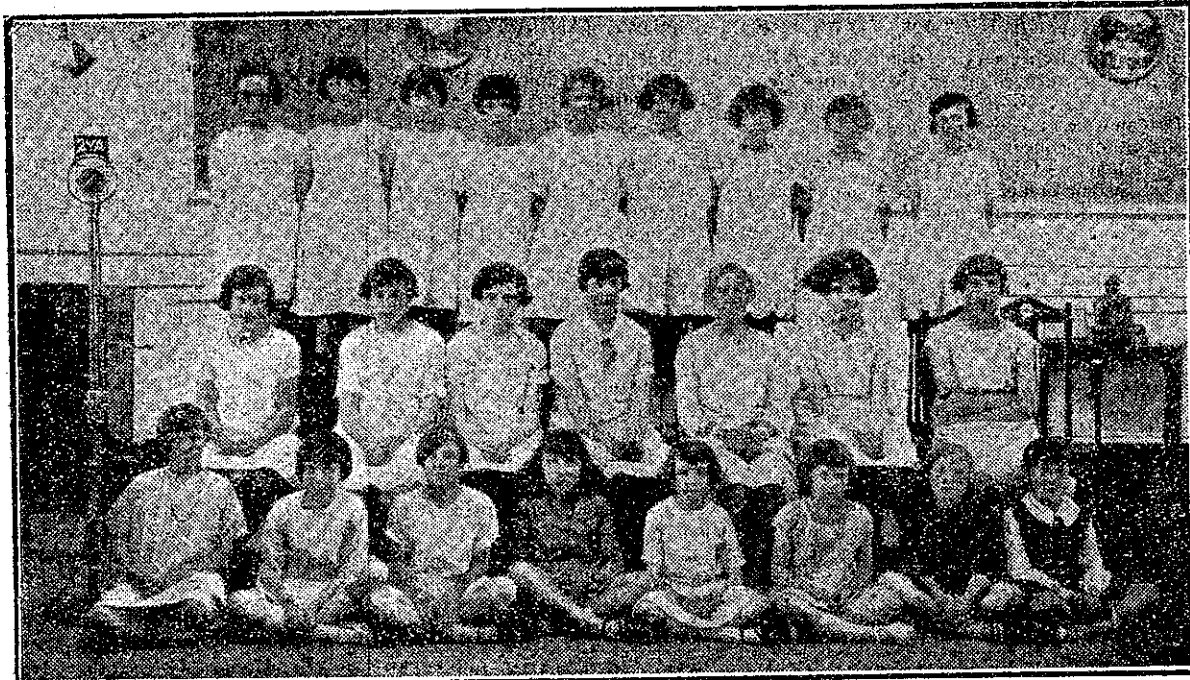
The members of the quartet are the soloists of the Terrace Congregational choir, of which Mr. Len. Barnes is the conductor. Mr. Barnes was in the Cathedral choir, Christchurch, as solo boy and solo baritone. He has sung in oratorio in California, London, and New Zealand, and his experience and knowledge have helped in the training of the other members of the Orpheus Quartet. On January 1 four quartets will be sung: "Evening

Hymn," by Dudley Buck; "Consider and Hear Me," by Plueger, with contralto solo; "As Pants the Hart," by Thomas, with soprano and tenor duet; and "Homeland," by Sullivan. Mrs. Harris will sing Liddle's beautiful setting of "How Lovely Are Thy Dwellings"—the words from Psalm lxxxi. Mr. Barnes will sing "Now, Heav'n in Fulllest Glory Shone," from Haydn's "Creation." This is a description of the creation of the animals—but yet there wanted man to praise his God.

On January 3 the Orpheus Quartet will sing "The Lark Now Leaves His Watery Nest." The words are by Davanant (1605-1668), and the music by Calcott. The main theme is provided by a tenor solo, with humming accompaniment. A very beautiful Old English number is "Golden Slumbers," one of the most soothing of lullabies. In heavier vein is "In England, Merrie England," from German's comic opera "Merrie England"—a delightful number, ending in canon form. The two ladies will sing Mendelssohn's duet, "I Would That My Love." This composer's works are always melodious, particularly his two part-songs for ladies' voices. Mr. Len. Barnes will sing Schumann's famous song, "The Two Grenadiers," the words by Heine and translated from the German by Paul England. It tells the story of the two released French soldiers who, on returning to their native country from Russian prisons, hear of the downfall of their beloved France and the capture of the Emperor. The song ends with the music of "The Marseillaise." Mr. Arthur Coe sings "Star of My Soul," from "The Geisha"; and Miss Lily Mackie, Blumenthal's lovely song, "Sunshine and Rain"—this a fine song of optimism; and Mrs. Harris, "My Thoughts." "In the Hazel Dell" will be sung by Mr. Len. Barnes and the quartet—another of the lovely old melodies that will never die.

On January 10 a very fine number, "Comrades in Arms," will be given, depicting the eve and day of battle. It is the call to fight, and is a fine martial melody.

(Continued on Page 15.)



ST. ANNE'S CONVENT CHOIR.

Another of the very excellent choirs which render items in the children's programmes from 2YA.

Photo S. P. Andrew.

THE "ARIEL" SINGERS

BRIGHT, CHEERY ITEMS

their first appearance at 2YA. This talented quartet On Friday, January 13, the "Ariel" Singers will make

their first appearance at 2YA. This talented quartet should give much pleasure to listeners. They are aiming at brightness and will welcome constructive criticism of their items. Listeners who would like to hear this quartet in any special numbers should forward requests to the Broadcasting Company, Wellington.

Three members of this quartet are ex-champions and scholarship holders at the Wellington competitions and are from the local studio of Madame Emily Briggs.

Miss Jeanette Briggs (soprano), in the Associated Board's Examination for "Licentiate (Performers)" Certificate this year, obtained the highest marks awarded to any candidate in the North Island, for singing, and was chosen therefrom and recommended for a two years' scholarship at the Royal Academy of Music, London. Miss Briggs was champion lady vocalist at the Wellington Competitions in 1926 and secured the highest aggregate marks and ladies' scholarship thereat in 1925. Her church work in Wellington has included Mendelssohn's "Hymn of Praise."

Miss Ngaire Coster (mezzo-contralto) is a promising young singer, another pupil of Madame Emily Briggs. In the 1925 Wellington Competitions she and Miss J. Briggs gained an equal number of aggregate marks each, both being awarded a diamond ring therefore. Miss Coster's choir and concert work has been extensive.

Mr. W. Roy Hill (tenor), during the past musical season alone, has appeared as soloist with the Napier Choral Society, the Wellington professional orchestra, the Wellington Orpheus Choir, the Wanganui Choral Society, the Wellington C.T. Male Voice Choir, the Hutt Orchestral Society, and the Wellington "Society of Musicians" orchestra. Apart from

being previously heard at 2YA, his recent engagements have included tenor leads in "The Golden Legend," "Merrie England," and "The Rose Maiden," whilst in Church work he sings "The Messiah," "The Crucifixion," "The Holy City," etc. In 1925 he won twelve first prizes and two gold medals at the Wellington Competitions.

Mr. J. M. Caldwell (bass), already a well known local artist, is a recent arrival from Scotland, the songs of which country he interprets beautifully. He was Gold Medallist at the Bute, Cumbrai and Kyles Festival in 1925, and at the Glasgow Festival in 1926, his artistic singing earning high praise from the adjudicator (Dr. Frederick J. Staton of Chesterfield Cathedral). Mr. Caldwell's voice is powerful, of wide range, and fine quality.

The "Ariel Singers" are anxious to provide listeners-in with the entertainment they are most likely to enjoy, and therefore would welcome any suggestions or criticisms of their work. Request numbers will be gladly "put on the air" from time to time. (Postal address—"Care Radio Broadcasting Co., Wellington.") In their initial miscellaneous programme on Friday, January 13, they especially draw attention to two popular items—the bass solo, "The Pride of Tipperary," and the quartet—"Hey Diddle Diddle." The second recital (February 3) will comprise modern English works by Roger Quilter, R. Vaughan Williams, Coleridge Taylor, etc., and later still an entirely Scottish evening will be provided.

the Bosworth-Hemus-Towsey Trio, Mr. J. P. Montague and Mr. and Mrs. Hugh Martin (banjo and piano).

The quartet—Misses P. Graham, A. Taylor, Messrs. R. Peter and A. Colledge—will submit a programme of songs that will be worthy of such accomplished vocalists.

Mr. and Mrs. Hugh Morton hail from Hamilton. They are excellent entertainers.

OLD NEW ZEALAND

LECTURES FROM 1YA.

Commencing next week, a series of twelve lectures on old New Zealand will be given from 1YA by Mr. A. B. Chappell, M.A. The lectures will be in the following sequence:—

The Days Before Discovery.
European Discoverers.
Coming of the Whalers.
Tale of Maori Conflicts.
The Napoleon of the North.
Missionary Beginnings.
Cradle of Civilisation.
Treaty of Waitangi.
Story of the Flagstaff.
End of the War in the North.
Early Colonisation and Settlement.
Some of the Pioneers.

TALKS AT 1YA.

On Wednesday, Mr. P. R. Powell, A.M.I.C.B. (London) will talk on "Concrete and its Uses."

Another lecture on "Physical Culture" will be given by Mr. Norman Kerr on Wednesday evening.

Mr. George Campbell's interesting talks on motoring will be continued on Wednesday evening.

CHESS AT 1YA

Station 1YA achieved a great success by an innovation in the form of a Chess Game which was played on December 20th between the Station and Listeners-in.

The mode of operation was as follows:—

At 8 o'clock the station announced its first move and the first reply received from listeners-in per telephone was taken as an official opposing move. This was continued through the entire programme, and after a most interesting game the station secured a mate on the 17th move. The listeners were handicapped through a rather bad move which cramped their game somewhat. The station game was developed with all pieces in play and the rooks were made ready to co-operate on the back line. The listeners' position was somewhat congested in the middle game, and their compositional errors really cost them the game. The whole experiment was a huge success as indicated by the number of replies received, and the staff were kept busy in handling all the moves which were sent in.

Etude Quartet

FURTHER TALENT FOR 2YA

In furtherance of its policy of securing first-class talent wherever possible, 2YA has enlisted the services of the Etude Quartet which will be "on the air" from January 9 onwards. The personnel of the quartet is sufficient guarantee that listeners will enjoy the items, and comprises: Miss Gretta Stark (soprano), Miss Rita Arnold (contralto), Mr. Frank Skinner (tenor), and Mr. Ray Kemp (baritone).

This quartet were on relay on November 28 from Mr. Warwick's recital. They have all appeared as soloists with the Orpheus Musical Society. Mr. Skinner was recently engaged by the New Plymouth Choral Society as soloist in the "Messiah" in which role he was very successful. Mr. Ray Kemp was heard on relay in the baritone solos of the same oration on December 17.

cornfields and is an old favourite. "Softly Falls the Moonlight" is a beautiful number and is obviously an evening song.

"Harbour Lights" will be sung by Miss Arnold and Mr. Kemp. This song describes the sea journey and finishes with a majestic theme on our journeying through life to the "Harbour Lights of God."

Miss Stark will sing the child's story of how Grandpapa proposed to



Photo, S. P. Andrew.

Miss Stark and Miss Arnold are both young singers with splendid voices. The former was the lead in David Devitt's recent production of "Oh, Lady, Lady," and with Mr. Kemp (as Abercoed) played in "Floradora" in the Grand Opera House last June.

The quartet "Far Away," by Mrs. J. Worthington Bliss, is a splendid arrangement of the old favourite "Where is Now the Merry Party." "Old Black Joe" has the appeal of the

Grandmama in the "Second Minuet." Mr. Kemp sings "The Shade of the Palm" from "Floradora." It was in this number in the opera that Mr. Kemp made a big hit to all old playgoers familiar. Miss Arnold sings "Melisande in the Wood," and Mr. Skinner "Vesta la Giubba," from "I Pagliacci," and with Miss Stark, "A Night in Venice."

This quartet is under the direction of Mr. Len Barnes, who trains both the singers and the ensemble.

BATTERIES

cause three-quarters the troubles of Radio—three-quarters the cost of upkeep.

COMMONSENSE POINTS TO A

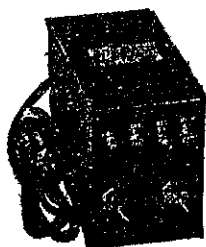
Sterling "B" Battery Eliminator

THREE MODELS FOR ALL TYPES OF SETS.

L. B. SCOTT, LTD.

MANCHESTER & WORCESTER STS., CHRISTCHURCH.

(If your dealer cannot supply, write us direct.)



THE BEST VALUE IN RADIO.

CROSLY 2 VALVE

RECEIVING SET

COMPLETE WITH VALVES, BATTERIES AND LOUDSPEAKER.

£9/15/-.

G. G. MACQUARRIE LTD.

CROSLY SALES AND SERVICE, 95 WILLIS STREET, Phone 45-865, WELLINGTON. All Accessories and Aerial Equipment in Stock.

Full Programmes for Next

—Copyright—

These programmes are copyright, but individual daily programmes may be published on day of performance.

NEWS AND NOTES

(By "Switch.")

Here, you married men, listen to this; it's worth while trying. A crying baby will generally be pacified if the headphones are placed on its ears if broadcasting is being received. The music that tames the savage breast can do the same with a howling kid. Try it!

Radio valves that have come loose from their bases may be repaired in a few minutes' time with a small quantity of commercial alcohol. At the point where the valve enters the base pour a few drops of alcohol. Allow the valve to stand for a moment until the alcohol moistens the cement, then press the bulb firmly into its base and set it aside for five or ten minutes. Upon examination it will be found that the cement has hardened and the valve is as good as new.

Most men are interested in science, but it is almost impossible to grasp scientific conceptions without having some scientific experience. The fact that so few men maintain chemical laboratories, astronomical observatories, botanical gardens, or zoological collections indicates that most forms of scientific research are beyond the reach of the multitude. Radio, one of the newest sciences, is basically as old as any; it is the only one that is wide open to rich and poor, sound and crippled, educated and unschooled.

Radiovision will make its debut in time for the people of North America and Western Europe to view, as well as listen to, the inauguration ceremonies of the next President of the United States, is the prophecy made by H. M. Shaw. The preliminary steps to clarify the patent situation has made remarkable progress, as shown by reputable manufacturers of radio apparatus, who have acknowledged patent responsibilities and rights.



MR. ROY HILL.

Mr. Hill is a member of the "Ariel" singers, who make their first appearance at 2YA on January 13. Mr. Hill has extensive competitions successes to his credit and has been much in demand for concert work lately.

Jauncey Photo.

A young American inventor, D. D. Knowles, has perfected a grid-glow relay valve which is regarded as the most sensitive current-controlling device ever developed, as it functions on a thousand-millionth of a watt. It is set in operation by the light of a match, or the approach of the human hand or a drop of water.

"This is 'Henry' broadcasting." To hear a station open its nightly programme that way would be the regular thing if some radio fans had their way (says a Washington, U.S.A., writer). They can see no reason for continuing the apparently meaningless call letter system, but it is not likely to be changed. Many call letters stand for names of station owners or mottoes. In some cases mottoes have been adopted in accordance with the letters. Examples are "WHT," Chicago, for Mayor William Hale Thompson; "KGW," Portland, Ore., for "Keep Growing Wiser," and "GTY," San Francisco, for "Glad Tidings Tabernacle."

Although many devices have been announced, alleged to discover the presence of metallic ore under the ground by magnetic or electro-magnetic means, until quite recently very little practical use has been made of them. When ground currents of radio frequency are transmitted from one point to another, the strength of the received impulse is dependent upon the power of the transmitter, the sensitivity of the receiver, the distance, and the conductivity of the soil. The presence of metallic ores exhibits itself by an unusually strong signal for the transmitting power and distance involved. However, no means has yet been developed for identifying the kind of metal involved, so that the principal value of such observations has been rather the elimination of unpromising ground than the identification of valuable mineral ores.

Sunday, January 1st

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

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: Literary selection by Mr. Culford Bell.
4.30: Close down.
6.0: Children's song service—Uncle Leo.
7.0: Relay of New Year service from the Baptist Tabernacle. Preacher, Rev. Joseph Kemp. Organist and choirmaster, Mr. Arthur E. Wilson.
8.30: Relay of Municipal Band concert from Town Hall.
9.30: A thought.
9.32: Close down.

2YA WELLINGTON (420 METRES)—SUNDAY, JANUARY 1.

- 6 p.m.: Children's service conducted by Rev. M. Holland.
6.55: Relay of evening service from Vivian Street Baptist Church. Preacher, Rev. F. E. Harry. Organist, Mr. Chas. Collins.
8.15 (approx.): Close down.
8.30: Studio concert.
Quartet—Orpheus Quartet, "Evening Hymn" (Buck).
Instrumental Quartet—Symons-Ellwood String Quartet, "Allegro and Scherzo from C Minor Quartet" (Beethoven).
Soprano solo—Mrs. Alice Harris, "How Lovely Are Thy Dwellings" (Liddle).
Quartet—Orpheus Quartet, "Consider and Hear Me" (Plueger).
Instrumental quartet—Symons-Ellwood String Quartet, "Adagio" from "C Major Quartet" (Haydn).
Quartet—Orpheus Quartet, "As Pants the Hart" (Thomas).
Baritone solo—Mr. Len. Barnes, recitative and aria from "Creation," "Now Heaven in Fullst Glory Shone" (Haydn).
Violin solo—Miss Ava Symons, with string accompaniment by Symons-Ellwood String Quartet, "Hungarian Dance" (Brahms).
Quartet—Orpheus Quartet, "The Homeland" (Sullivan).

3YA CHRISTCHURCH (306 METRES)—SUNDAY, JANUARY 1.

- 5.45 p.m.: Children's song service by Uncle Sam, assisted by cousins from St. David's Presbyterian Sunday School.
7.0: Relay of evening service from St. Paul's Presbyterian Church, Cashei Street. Preacher, Rev. Gilman Dunn, of Kaikoura. Organist and choirmaster, Mr. Norman R. Williams.
An after-service vocal and organ recital will be given from St. Paul's Church, under the direction of Mr. Norman R. Williams.

4YA DUNEDIN (463 METRES)—SUNDAY, JANUARY 1.

- 5.45 p.m.: Children's song service, conducted by Big Brother Bill and choir of children's voices.
7.0: Relay of service from St. Paul's Cathedral. Preacher, Archdeacon Curzon-Siggers. Organist, Mr. E. Heywood, F.R.C.O.
8.15: Studio concert.
9.15: Close down.

Monday, January 2nd

1YA AUCKLAND (333 METRES)—MONDAY, JANUARY 2.

- 12 (noon): Relay of Auckland Racing Club's meeting from Ellerslie.

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

- 2 p.m.: Relay of Plunket Shield cricket match—Wellington v. Canterbury, from Basin Reserve. Mr. A. Varney, secretary, Wellington Cricket Association, announcing. Relay interspersed with selected gramophone items.
6.0: Children's hour—Aunt Jo. Gramophone selections. Vocal solo, Cousin Irene, "When I'm a Grown-up Lady" (Fisher). Lecturette, Aunt Barry, "Talk to Little People." Pianoforte solo, Cousin Thelma, selected. Aunt Jo sends birthday greetings. Vocal solo, Cousin Constance, selected. Recitations, Cousin Joyce, (a) "The Second Minuet," (b) "Pink Roses." Song, Cousin Irene, "Mighty Lak' a Rose" (Nevin). Pianoforte solo, Cousin Stella, "A Little Suite" (Williams). Violin solo, Cousin Muriel, selected. Gramophone selections. General chat.
7.0: News session, market reports, and sports results.
8.0: Chimes of the General Post Office clock, Wellington.
8.1: Overture.
8.5: Quartet—The William Renshaw Quartet, "Love is Meant to Make Us Glad" from "Merrie England" (German).
8.9: Elocutionary—Mr. A. Stanley Warwick, some humour.
8.15: Baritone solo—Mr. Wilbur Davies, "Harlequin" (Midderson).
8.20: Instrumental trio—Symons-Ellwood-Short Trio, "Allegro Trio, No. 2" (Gurlitt).
8.30: Soprano solo—Mrs. Amy Dunn, "Good-bye" (Tosti).
8.35: Tenor solos—Mr. Wm. Renshaw, (a) "My Heart's Desire" (Clarke); (b) "The Burning Hours" (Clarke).



Radio Set Manufacturers recognise the vital importance of the valve.

That is why the leading makers of sets sold on a quality basis use

R-C-A Radiotrons throughout, and specify them for replacement.

There's a RADIO-TRON for every purpose, made by the makers of the R.C.A. RADIOLA.

Amalgamated Wireless (A'sia) Ltd.

BOX 830,

WELLINGTON.

- 8.42: Pianoforte solo—Mr. Gordon Short, "Reve Angelique" (Rubenstein).
8.47: Folk songs—Miss Nora Greene, (a) "Dabbling in the Dew"; (b) "Drink to Me Only"; (c) "Strawberry Fair" (Old English).
8.56: Weather forecast.
8.58: Lecturette—Mr. Leonard Griffiths, F.R.H.C., "Flower Legends from Greek History," with elocutionary prologue.
9.10: Baritone solo—Mr. Wilbur Davies, "The Wheel Tapper's Song" (Charles).
9.14: Saxophone solo—Mr. E. J. Askenbeck, "Valse Erica" (Weidoeft).
9.18: Soprano solo—Mrs. Amy Dunn, "Home, Little Maori, Home" (Hill).
8.21: Instrumental trio—Symons-Ellwood-Short Trio, "Andantino and Finale" (Gurlitt).
9.30: Tenor solos—Mr. Wm. Renshaw, (a) "From the Land of the Sky Blue Water"; (b) "Far Off I Hear a Lover's Flute" (Cadman).
9.36: Elocutionary—Mr. A. Stanley Warwick, further humour.
9.43: Contralto solo—Miss Nora Greene, "Galway by the Sea" (Barclay).
9.48: Saxophone solo—Mr. E. J. Askenbeck, "Valse Vanite" (Weidoeft).
9.54: Quartet—The William Renshaw Quartet, "O, Hush Thee, My Baby" (Sullivan).
God Save the King.

3YA CHRISTCHURCH (306 METRES)—MONDAY, JANUARY 2.

- 12 (noon): Relay description of Canterbury Park Trotting Club's meeting at Addington.
6 p.m.: Children's hour—Uncle Jack and Aunt Edna, bed-time stories, songs, and birthday greetings.
7.0: Close down.
7.15: News and reports.
8.0: Chimes. Relay of orchestral selections from Strand Picture Theatre Orchestra, under the direction of Mr. Harry Ellwood.
Studio concert by Christchurch Municipal Band, under the direction of Mr. A. J. Schnack, assisted by 3YA artists.
8.10: March—The Band, "Conqueror" (Moorhouse).
8.18: Vocal quartet—Cathedral Male Voice Quartet, "The Hunt Is Up" (Hutton).
8.22: Selection—The Band, "Verdi" (Round).
8.42: Tenor solo—Mr. J. Hinton, "Onaway! Awake, Beloved" (Cowan).
8.45: Waltz—The Band, "Dreaming of Brown Eyes" (Mayne).
8.55: Bass solo—Mr. Arthur Woodward, "Hope, the Hornblower" (Ireland).
9.0: Relay of orchestral selections from Strand Theatre.
9.10: Vocal quartet—Cathedral Male Voice Quartet, "Night Winds That So Softly Blow" (Calkin).
9.14: Hymn—The Band, "Sandon" (Dykes).
9.22: Humorous recitals—Mr. Sydney Comfort, (a) "Syd. and Bill Arrive Home from Sea"; (b) "The Colonel and the Raw Recruit."
9.28: Two-step—The Band, "Bandy Bandoero" (Wallace).
9.38: Tenor solo—Mr. Harry Gill, "When Spring Comes to the Mountains" (Lohr).
9.41: Overture—The Band, "Tancredi" (Rimn.er).
9.51: Vocal quartet—Cathedral Male Voice Quartet, "Pussy's in the Well" (Herbert).
9.54: Tenor solo—Mr. J. Hinton, "Crossing the Bar" (Willeby).
9.58: Cornet solo—Mr. Fred. Fox, selected.
10.1: Bass solos—Mr. Arthur Woodward, (a) "Barbara Allen"; (b) "Lass of Richmond Hill."
10.8: Burlesque lecture—Mr. Sydney Comfort, "Unnatural History."
10.12: Fox-trot—The Band, "Sweet as a Rose" (Evans).
10.18: Tenor solo—Mr. Harry Gill, "In Dreams" (Smith).
10.21: Vocal quartet—Cathedral Male Voice Quartet, "Evening" (Reay).
10.25: March—The Band, "Half-and-Half" (Morrison).
10.30: Relay of dance music from Caledonian Hall (by permission of Canterbury Caledonian Society and Mr. Reg. Stillwell). Orchestra under the direction of Mr. Jackson.
God Save the King.

4YA DUNEDIN (463 METRES)—MONDAY, JANUARY 2.
SILENT DAY.

Tuesday, January 3rd

1YA AUCKLAND (333 METRES)—TUESDAY, JANUARY 3.

- 12 (noon): Relay of Auckland Racing Club's meeting from Ellerslie.
6 p.m.: Children's hour.
7.0: Close down.
7.15: News and reports.
7.45: Close down.
8.0: Chimes. Relay of orchestral overture from Majestic Theatre Orchestra, under the direction of Mr. J. Whiteford-Waugh.
8.11: A special performance of Liza Lehmann's song cycle, "In a Persian Garden" from "Rubaiyat" of Omar Khayyam. Soprano, Miss Lola Solomon; contralto, Mrs. Cyril Towsey; tenor, Mr. James Simpson; baritone, Mr. Frank Sutherland; quartet, the Waiata Quartet.
Quartet—"Wake, for the Sun."
8.14: Baritone solo—"Now the New Year."
8.16: Tenor solo—"Iram, Indeed, Is Gone."
8.20: Quartet—"Come, Fill the Cup."
8.24: Instrumental interlude—The Towsey-Bosworth-Hemus Trio, "Trio, Op. 25, Allegro Andante" (Bach).
8.34: Contralto solo—"I Sometimes Think That Never Blows."
8.38: Duet—"A Book of Verses."
8.42: Cornet solo—Mr. Eustace Tregilgas, "Neath Astral Skies" (Code).
8.47: Sketch—Miss Edna Smeaton and Messrs. F. Adeane and I. Sharp, "The Stranger" (De Garde).
8.57: Violin solo—Miss Ina Bosworth, selected.
9.1: Weather forecast.
9.3: Baritone solo—"Myself When Young."
9.8: Soprano solo—"But If the Soul Can Fling."
9.12: Relay of orchestral interlude from Majestic Theatre.
9.22: Contralto solo—"The Worldly Hope Men Set Their Hearts Upon."
9.25: Cornet solos—Mr. E. Tregilgas, (a) "Castles in the Air" (Smith); (b) selected.

To
Prest-O-Lite
RADIO
BATTERY USERS
For full Recharging and Better Service, bring your Battery to the Authorised Service Station, or ring 42-475.
L. J. PURDIE & CO., LTD.,
MERCER STREET, Opp. "Evening Post." WELLINGTON.

LISTEN IN TO KELLOGG FLAWLESS REPRODUCTION RADIO

—Backed by 29 years Telephone experience.
It is the set that possesses ALL the qualities which you have been looking for—

Selectivity—flawless reproduction, simplicity, wide range.
Come in—hear it—and arrange for a demonstration.

ERNEST DAWSON, LTD.,

Sole Kellogg Agents.
40 MANNERS STREET WELLINGTON.

Week - All Stations - to Jan. 8

—Copyright—

These programmes are copyright, but individual daily programmes may be published on day of performance.

- 9.33: Quartet—"They Say the Lion and the Lizard Keep."
9.36: Instrumental interlude—The Towsey-Bosworth-Hemus Trio, "Trio, Op. 25, Allegro Molto" (Bach).
9.46: Sketch—Miss E. Smeaton, Messrs. Adeane and Sharp, "Stung" (De Garde).
9.54: Tenor solo—"Ah, Moon of My Delight."
9.59: Relay of musical entr'acte from Majestic Theatre.
10.4: Baritone solo—"As Then the Tulip."
10.7: Quartet—"Alas, That Spring Should Vanish With the Rose."
10.10: A thought.
10.12: God Save the King.

2YA WELLINGTON (420 METRES)—TUESDAY, JANUARY 3.

- 2 p.m.: Relay of Plunket Shield cricket match from Basin Reserve, Wellington v. Canterbury. Mr. A. Varney, secretary, Wellington Cricket Association, announcing. Relay interspersed with selected gramophone items.
5.0: Close down.
6.0: Children's hour—Uncle Jasper. Violin solo, Cousin Veronica, "Souvenir" (Drdla). Pianoforte solos, Cousin Ellen, (a) "Soulful Eyes" (Harris), (b) "Dream Kisses" (Rofle). Recitation, Cousin Vernon, selected. Uncle Jasper sends greetings. Violin solo, Cousin Veronica, "Blue Bells of Scotland" (Harris). Pianoforte solo, Cousin Ellen, "The More We Are Together" (Conway). Recitations, Cousin Ellen, (a) "Mary Ann," (b) "Bunglers." Musical medley, Pat and Mike, accordion, mouth-organ, concertina, etc.). Uncle Jasper, story time.
7.0: News session, market reports, and sports results.
8.0: Chimes of the General Post Office clock, Wellington.
8.1: Overture—"Der Freischütz" (Weber).
8.5: Quartet—The Orpheus Quartet, "The Lark Now Leaves His Watery Nest" (Calcott).
8.9: Humorous recital—Mr. Len. Griffiths, "The Wedding."
8.16: Contralto solo—Miss Lily Mackie, "Sunshine and Rain" (Blumenthal).
8.21: Instrumental trio—Symons-Ellwood-Short Trio, "Moderato" from "Bach Trio" (Bach).
8.27: Baritone solo—Mr. Keith Grant, "Bois Epais" (Tully).
8.31: Tenor solo—Mr. Arthur Coe, "Star of My Soul" (Jones).
8.36: Vocal duet—Miss Lily Mackie and Mrs. Alice Harris, "I Would That My Love" (Mendelssohn).
8.42: 'Cello solo—Mr. Geo. Ellwood, "Chant Hindou" (Rimsky-Korsakoff).
8.48: Baritone solo—Mr. Len. Barnes, "Two Grenadiers" (Schumann).
8.53: Weather forecast.
8.55: Lecturette—Mr. A. J. Dry, "History of the Early Whaling Industry."
9.10: Organ recital—Mr. H. Temple White, (a) "Hymn of the Nuns" (Wely); (b) "Canzonetta" (Frysjer); (c) "Postlude in G" (Read).
9.18: Quartet—The Orpheus Quartet, "Golden Slumbers" (Old English).
9.22: Instrumental trio—Symons-Ellwood-Short Trio, "Andante" from "Bach Trio" (Bach).
9.28: Baritone solo—Baritone solos—Mr. Keith Grant, (a) "Song of the Flea" (Rossini); (b) "O, Western Wind" (Mae Brahe).
9.32: Baritone solo and quartet—Mr. Len. Barnes and Orpheus Quartet, "Hazel Dell."
9.37: 'Cello solo—Mr. Geo. Ellwood, "Serenade" (Squire).
9.43: Soprano solo—Mrs. Alice Harris, "My Thoughts" (Hewitt).
9.48: Humorous recital—Mr. Len. Griffiths, "The Village Reunion."
9.55: Quartet—The Orpheus Quartet, "In England, Merrie England" (German).
God Save the King.

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

- 12 (noon): Relay description of Canterbury Park Trotting Club's meeting at Addington.

4YA DUNEDIN (463 METRES)—TUESDAY, JANUARY 3.

- 3 p.m.: Afternoon session—Selected Studio items.
3 p.m.: Town Hall chimes. His Master's Voice recital.
3.30: Talk on "Fashions," by a representative of the D.S.A.
3.45: Studio music.
4.0: Talk on "Cooking by Electricity," by a representative of Turnbull and Jones, Ltd.
4.15: His Master's Voice recital.
4.30: Close down.
6.0: Town Hall chimes. Children's hour—Big Brother Bill. Sister Martha tells about the Hishwasher, Sister Ruby will sing a song, and Little Sister Zeitha plays the piano. Not forgetting the "Happy Ditty," letters, and the birthday basket; and Big Brother Bill tells some stories.
7.0: Close down.
7.15: News session.
7.30: Address, "Southern Tourist Resorts," by Mr. A. E. Wilson, Dunedin manager of the Tourist Department.
8.0: Studio concert by the Dunedin Banjo Trio and assisting artists.
8.1: Popular numbers—Banjo Trio, (a) "I've Never Seen a Straight Banana"; (b) "The Midnight Waltz" (Donaldson).
8.9: Soprano solos—Mrs. D. Carty, (a) "Vale" (Russell); (b) "Garden of Happiness" (Wood).
8.16: Recital—Miss Roberta Williams, "The King's Breakfast."
8.20: Popular numbers—Banjo Trio, (a) "When the Red, Red Robin" (Woods); (b) "When You and I Were Seventeen" (Rosoff).
8.28: Tenor solo—Mr. Alfred Walmsley, "When Shadows Gather" (Marshall).
8.32: Recital—Mr. J. B. McConnell, "An Old Sweetheart of Mine" (Riley).
8.37: Popular numbers—Banjo Trio, (a) "Hello, Bluebird" (Friend); (b) "Dreamy Melody" (Naset).
8.45: Baritone solos—Mr. Reg. Richards, (a) "Sea Fever" (Ireland); (b) "Annie Laurie."
8.52: Recital—Miss Roberta Williams, "Playmates."

- 8.56: Popular numbers—Banjo Trio, (a) "Just a Bird's-Eye View" (Donaldson); (b) "When Lights Are Low" (Fiorito); (c) "Baby Face" (Akst).
9.8: Soprano solo—Mrs. D. Carty, "We'd Better Bide a Wee."
9.12: Recital—Mr. J. B. McConnell, "If" (Kipling).
9.16: Popular numbers—Banjo Trio, (a) "Annabelle" (Henderson); (b) "Sweet Hawaiian Moonlight" (Klickmann).
9.24: Tenor solos—Mr. Alfred Walmsley, (a) "Mary" (Richardson); (b) "Roses of Picardy" (Wood).
9.31: Humorous recital—Miss Roberta Williams, "Mrs. 'Arris."
9.36: Popular numbers—Banjo Trio, (a) "Charmaine" (Pollock); (b) "The Melody That Made You Mine" (Polla).
9.44: Baritone solo—Mr. Reg. Richards, "Youth" (Allitsen).
9.47: Humorous recital—Mr. J. B. McConnell, "Subject to Slight Alteration" (Tay).
9.52: Popular numbers—Banjo Trio, (a) "Any Ice To-day, Lady?" (Ballard); (b) "I'm Going" (Edwards).
10.0: Close down.

Wednesday, January 4th

1YA AUCKLAND (333 METRES)—WEDNESDAY, JANUARY 4.

- 3 p.m.: Afternoon session—Selected Studio items.
4.0: A literary selection, by Mr. Culford Bell.
4.30: Close down.
6.0: Children's hour.
7.0: Close down.
7.15: Talk on "Concrete and Its Uses," by Mr. F. E. Powell, A.M.I.M.E. (Lond.).
7.30: News and reports.
7.45: Talk on "Physical Culture by Norman Kerr.
8.0: Chimes—Relay of orchestral overture from Rialto Theatre Orchestra, under the direction of Henry C. Engel.
8.11: Vocal quartet—The Ariel Quartet, "We're Sorry to Delay You" from "Dorothy" (Cellier).
8.15: Tenor solo and chorus—Mr. Jean Dellore, "Oh, Is There Not One Maiden" from "Pirates of Penzance" (Sullivan).
8.20: Instrumental—The Hawaiian Four, "Hawaiian Melodies."
8.25: Vocal duet—Miss A. Dellore and Mr. M. Ballance, "I Love You Truly" (Jacobs-Bond).
8.29: Instrumental trio—The Towsey-Bosworth-Hemus Trio, "Trio in A, Andante and Allegro Finale" (McFarlane).
8.39: Soprano solo—Miss A. Dellore, "Carissima" (Penn).
8.44: 'Cello solo—Miss Lalla Hemus.
8.49: Humorous sketch—Miss Lynda Murphy, humorous sketch.
8.55: Relay of orchestral interlude from Rialto Theatre.
9.5: Weather forecast.
9.7: Bass solo—Mr. Maurice Balance, "The Song of the Flea" (Moussorgsky).
9.12: Instrumental—The Hawaiians, "Memories of Hawaii."
9.20: Vocal duet—The Dellores, "Golden Song" from "Lilac Time" (Clutsum).
9.25: Instrumental trio—The Towsey-Bosworth-Hemus Trio, "Third Movement Trio, Op. 112" (Raff).
9.35: Contralto solo, with 'cello obbligato—Miss Beryl Smith, "Hindoo Song" (Bemberg).
9.39: Sketch—Miss Lynda Murphy, "Humorous Sketches."
9.45: Relay of orchestral entr'acte from Rialto Theatre.
9.55: Vocal duet—Messrs. J. Dellore and M. Balance, selected.
9.59: Vocal quartet—The Ariel Quartet, "Pleasant Dreams Attend Your Slumber" from "Dorothy" (Cellier).
10.3: A thought.
10.4: God Save the King.

2YA WELLINGTON (420 METRES)—WEDNESDAY, JANUARY 4.

SILENT DAY.

3YA CHRISTCHURCH (306 METRES)—WEDNESDAY, JANUARY 4.

- 3 p.m.: Afternoon session—Selected Studio items.
4.30: Close down.
6.0: Children's hour—Uncle Sam, bed-time stories, songs, and birthday greetings.
7.15: Addington stock market report and news.
8.0: Chimes. Relay of orchestral selections from Grand Picture Theatre Orchestra, under the direction of Mrs. Black.
8.15: Contralto solos—Miss Nellie Lowe, (a) "The Little Brown Owl" (Sanderson); (b) "Sink, Red Sun" (Del Riego).
8.25: Vocal duet—Miss Mary Shaw and Mr. T. G. Rogers, "Miserere Scene" (Verdi).
8.29: Instrumental trio—Christchurch Broadcasting Trio, "Second Movement" from "Trio, Op. 32" (Godard).
8.37: Baritone solos—Mr. A. G. Thompson, (a) "Sombre Woods" (Lully); (b) "Drums" (Meale).
8.47: Recital—Mr. H. Instone, "Hard Luck: A Yankee's Philosophy."
8.51: Violin solos—Miss Irene Morris, (a) "Menuet" (Porpora-Kreisler); (b) "Midnight Bells" (Kreisler).
9.0: Vocal quartet—Misses Shaw and Lowe and Messrs. Rogers and Thompson, "Four Jolly Smiths" (Leslie).
9.6: Relay of orchestral selections from Grand Theatre.
9.21: Soprano solos—Miss Mary Shaw, A.L.C.M., (a) "Sea Rapture" (Coates); (b) "The Blackbird's Song" (Scott).
9.29: Recital—Mr. H. Instone, "Levin's Buys a Ford Car."
9.35: Instrumental trio—Christchurch Broadcasting Trio, (a) "Prelude" (Rachmaninoff); (b) "Waltz, Op. 66" (Tchaikowsky).
9.44: Tenor solos—Mr. T. G. Rogers, (a) "A Furtive Tear" (Donizetti); (b) "I Hear You Calling Me" (Marshall).
9.53: Vocal quartet—Misses Shaw and Lowe and Messrs. Rogers and Thompson, "Eventide" (Raff).
God Save the King.

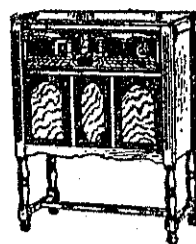
4YA DUNEDIN (463 METRES)—WEDNESDAY, JANUARY 4.

SILENT DAY.

Thursday, January 5th

1YA AUCKLAND (333 METRES)—THURSDAY, JANUARY 5.

- 3 p.m.: Afternoon session—Selected Studio items.
4.30: Close down.
6.0: Children's hour.
7.0: Close down.
7.15: News and reports and book review.
7.45: Close down.
8.0: Chimes.
8.1: Relay of orchestral overture from Princess Theatre Orchestra, under the direction of Mr. Moody.
8.11: Vocal quartet—The Premiere Quartet, "The Venetian Boatmen's Evening Song" (Hatten).
8.16: Tenor solo—Mr. Birrell O'Malley, "The Eagle."
8.20: Soprano solo—Miss Christina Ormiston, selected.
8.24: Instrumental trio—The Towsey-Bosworth-Hemus Trio, "Trio, Op. 88, Romance" (Schumann).
8.34: Baritone solo—Mr. Dudley Wrathall, "The Fishermen of England" (Phillips).
8.39: Contralto solo—Miss Mina Caldwell, "Abide With Me" (Liddle).
8.43: Pianoforte solo—Mr. Cyril Towsey, "Autumne" (Chaminade).
8.48: Humorous recital—Mr. Allan McElwain, some humour.
8.54: Relay of orchestral interlude from Princess Theatre.
9.4: Weather forecast.
9.5: Tenor solo—Mr. Birrell O'Malley, "La Donna e Mobile" (Verdi).
9.9: Radio lectures on "Old New Zealand," by Mr. A. B. Chappell, No. 1, "The Days Before Discovery."
9.24: Instrumental trio—The Towsey-Bosworth-Hemus Trio, "Trio, Op. 88, Duetto, Finale" (Schumann).
9.34: Baritone solo—Mr. Dudley Wrathall, "La Partida" (Alvarez).
9.39: Contralto solos—Miss M. Caldwell, (a) "Lullaby" (Barnett); (b) "Rose in Bud" (Forster).
9.43: Relay of orchestral selections from Princess Theatre.
9.53: Humorous recital—Mr. A. McElwain, more humour.



7 Tube Console
as illustrated.
£38

6 Tube Console £27
Table Sets: £19 & £30

Metrodyne
7 Tube Set
Single Dial Radio

Easy to operate—clear and free of distortion—will not howl. Can be supplied for light socket operation if desired.

Agents wanted everywhere.
Sole N.Z. Agents:

Royds Motors Ltd
211 Cashel St., Chch.

An American authority says an aerial from 40 to 50 feet high is the best for escaping great barrages of static.

President Coolidge, in his address before the International Radio Conference at Washington, said: "This conference recognises that the radio has become a great influence in the world. Like every invention which increases the power of man, it may be used for good or for evil. It can serve the cause of understanding and friendship among people and among nations, or it can be used to create ill will and dissension. The world will not be benefited by this increase in the scope of its power unless there is a corresponding increase in moral development. Your main object will be to raise this great industry into the realm of beneficent public service."

Lack of sensitivity and volume in a receiver can often be traced to poor contact between the socket contact springs and the prongs of the valve. The exceedingly feeble currents passing through the socket must meet with a minimum of resistance, and in this respect, perfect contact between the prongs and socket is an absolute necessity. A liberal application of a fine grade of sandpaper on the valve prongs will quickly remove any of the corrosion and high spots which make for a poor contact. It is advisable to clean the prongs at regular intervals.

RADIO LITERATURE!
THE ARO BOOK DEPOT.
Gas Co.'s Bldg., Courtenay Place, WELLINGTON.
Specialists in Radio Publications. New stocks Every Overseas Mail. Latest issue of—Radio Call Book, 3/3; Radio News, 1/11; Popular Radio, 2/1; Radio Broadcast, 2/9; Radio Encyclopedia (Gernsback) 11/2.
These Prices Include Postage.

Sold out in one week!

Our first shipment of Siemens Super Radio Batteries were cleared within one week of landing in New Zealand.
If you want the battery that ensures perfect reception, place your order NOW against the next shipment.



SIEMENS

SUPER RADIO
HT DRY BATTERY
Specially designed for High Power Receiving Sets. Extra large capacity unit cells.
36 cells—60 volts (nominal).
Price 31/6
Weight, 20 lbs.
N.Z. Agents:

CORY-WRIGHT AND SALMON,
Engineers, Wellington and Auckland.

LOOK for this sign
in your Town.



It Betokens
An Authorised

FADA
RADIO
DEALER

North Otago Agents for—
ELECTRICAL SUPPLIES CO.,
2 Itchen Street,
OAMARU.



Programmes Continued

— Copyright —
These programmes are copyright, but individual daily programmes may be published on day of performance.

9.59: Vocal quartet—The Premiere Quartet, "Stars of the Summer Night" (Tours).
10.3: A thought.
10.5: God Save the King.

2YA WELLINGTON (420 METRES)—THURSDAY, JANUARY 5.

3 p.m.: Afternoon session—Selected Studio items.
Chimes of the General Post Office clock, Wellington.
3.1: Selected gramophone items.
5.0: Close down.
6.0: Children's hour—Uncle Sandy. Gramophone selection. Song, Cousin Kenneth, "Advice" (Carew). Uncle Sandy sends birthday greetings. Pianoforte solos, Cousin Billie, (a) "To the Spring" (Grieg), (b) "Country Pieces" (Quilter). Songs, Cousin Elsie, (a) "Chintz and Chippendale" (McGeoch), (b) "Lilac Tree" (Gartlan). Recitations, Cousin Isma, (a) "The Three Bears," (b) selected. Uncle Sandy, story time. Song and duct, selected. Gramophone selection.
7.0: News session, market reports, and sports results.
8.0: Chimes of the General Post Office clock, Wellington.
8.1: March—Wellington Artillery Band, "Colonel Bogey" (Alford).
8.5: Quartet—Lyric Quartet, "All Through the Night."
8.9: Overture—Wellington Artillery Band, "Silver Cross" (Greenwood).
8.15: Baritone solos—Mr. Will Goudie, (a) "A Sunrise" (Baker); (b) "Little Irish Girl" (Lohr).
8.20: Serenade Espagnole—Wellington Artillery Band, "A Rose of Granada" (Danizet).
8.27: Quartet—Lyric Quartet, "Lucky Jim" (Parks).
8.32: Cornet solo, with band accompaniment—Sergeant Bowman, "Old Folks at Home" (Hartman).
8.40: Tenor solo—Mr. Harry Phipps, "Sweet Early Violets" (Sherrington).
8.45: Humoresque—Wellington Artillery Band, "A Trip to Blackpool" (Raymond).
8.52: Quartet—Lyric Quartet, "Oft in the Stilly Night."
8.55: Weather forecast.
8.56: Lecture—Mr. Byron Brown, "Did Shakespeare write Shakespeare?"
9.12: Entr'acte—Wellington Artillery Band, "Evening Bells" (Rimmer).
9.17: Bass solos—Mr. W. Binet Brown, (a) "King Love" (Sutton); (b) "Solomon and David" (Cooke).
9.22: Waltz—Wellington Artillery Band, "Cinderella" (Raymond).
9.26: Corner duct—Bandsmen, "Panorama" (Greenwood).
9.34: Tenor solo—Mr. Geo. Howe, "The Lyric Tenor."
9.40: Selection—Wellington Artillery Band, "The Crimson Star" (Greenwood).
9.47: Quartet—Lyric Quartet, "In the Gloaming" (Harrison).
9.53: Descriptive march—Wellington Artillery Band, "Paddy's Patrol" (Dacre).
God Save the King.

3YA CHRISTCHURCH (306 METRES)—THURSDAY, JANUARY 5.

3 p.m.: Afternoon session—Selected Studio items.
4.30: Close down.
6.0: Children's hour—Chuckie and Chook. Bed-time stories, songs, and birthday greetings.
7.15: News and reports.
7.30: Talk—Mr. L. E. Vernazini, of Christchurch Philatelic Society, "Stamps Worth Fortunes."
8.0: Chimes. Relay of orchestral selections from Everybody's Picture Theatre Orchestra, under the direction of Mr. Albert Bidgood.
Programme of traditional English songs and English folk songs.
8.15: Vocal quartet—Madame Gower-Burns, Miss Jessie King, Messrs. Harold Prescott and Bernard Rennell, "Some Folks Do" (Foster).
8.17: Baritone solo—Mr. Bernard Rennell, "Care Flies from the Lad That is Merry" (Arne).
8.20: Pianoforte solo—Miss Aileen Warren, "Melodie" (Rachmaninoff).
8.24: Contralto solo—Miss Jessie King, "I've Been Roaming" (Horn).
8.28: Instrumental trio—Christchurch Broadcasting Trio, (a) "Romance" (Bridge); (b) "Intermezzo"; (c) "Salerello."
8.38: Vocal quartet—Madame Gower-Burns, Miss Jessie King, Messrs. Harold Prescott and Bernard Rennell, "It Was a Lover and His Lass" (Morley).
8.41: Soprano solo—Madame Gower-Burns, "A Pastoral" (Carey).
8.44: Recital—Miss Lucy Cowan, "The Well of St. Keyne" (Southey).
8.48: Vocal duet—Tenor and baritone, Messrs. Harold Prescott and Bernard Rennell, "Trust Her Not" (Balfe).
8.52: Tenor solo—Mr. Harold Prescott, "Where the Bee Sucks, There Lurk I" (Arne).
8.55: Vocal quartet—Madame Gower-Burns, Miss King, Messrs. Prescott and Rennell, "Dabbling in the Dew" (folk song).
8.57: Pianoforte solo—Miss Aileen Warren, "Polonaise in C Sharp Minor" (Chopin).
9.3: Baritone solo—Mr. Bernard Rennell, "How Blest Are We Seamen" (Moffatt).
9.6: Vocal quartet—Madame Gower-Burns, Miss King, Messrs. Prescott and Rennell, "John Peel" (Davies).
9.9: Contralto solo—Miss Jessie King, "The Cuckoo" (Canon).
9.12: Vocal duet—Madame Gower-Burns and Miss Jessie King, "I Know a Bank" (Horn).
9.15: Recital—Miss Lucy Cowan, "High Tide on the Coast of Lincolnshire" (Ingelow).
9.20: Relay of orchestral selections from Everybody's Theatre.
9.30: Tenor solo—Mr. Harold Prescott, "Drink to Me Only With Thine Eyes" (Old English).
9.37: Instrumental trios—Christchurch Broadcasting Trio, (a) "Slow Waltz" (Case); (b) "Tempo di Minuetto" (Beethoven); (c) "Polacca" (Thomas).
9.52: Soprano solo—Madame Gower-Burns, "Cherry Ripe" (Horn).
9.56: Vocal quartet—Madame Gower-Burns, Miss King, Messrs. Prescott and Rennell, "Good Night" (Davies).
God Save the King.

4YA DUNEDIN (463 METRES)—THURSDAY, JANUARY 5.

7 p.m.: Town Hall chimes.
7.1: Request gramophone concert.
7.30: News session.

Excessive voltage or defective insulation will cause condensers to break down.

A receiving or transmitting valve that will not oscillate any more can be made to serve as a rectifier tube as long as the plate or grid are not shorted to the filament. The socket springs connecting to the grid and plate of the tube should be wired together, so that the tube will carry more current.

In the United States some schools encourage pupils to build broadcast receivers for home use. Some have workshops where the young set-builders work under the supervision of manual-training teachers. In one State, in a single year, school officials reported that more than 4000 receivers were built by pupils, and it is believed that as many more were built, but not reported.



MR. JAMES SIMPSON.

Mr. James Simpson, who is a member of the Vaivata Quartet, studied singing under Ray Jackson (a pupil of the late Sir Charles Santley). He was for some years a member of the Dunedin Male Choir, has performed for the Wellington Royal Choral Society and for various societies in Auckland. Mr. Simpson has a tenor voice of good quality which he uses with intelligence and discretion.

One of the silent men in Joe Aronson's Symphonists at 5LO, Melbourne, is Andrew Robertson, a Scotchman, but, typical of his race, when he does make a noise, it is indeed "some noise," not on the bagpipes, but the sousaphone, the big instrument which booms out the deep bass notes, with such beautiful mellowness so noticeable in the symphonies of Joe Aronson's Symphonists.

In Japan the entire cost of broadcasting, including operating expenses, salaries, and artists' fees, is disbursed by the license fees collected from the subscribers, who pay a monthly fee to the local broadcasting station of one yen, or 2s., and an additional yearly fee of one yen, or 2s., to the Government.

It is frequently found that, for a small room, a 201A-type valve in the last audio stage, will give sufficient volume, without overloading or rushing the valve; but, for a fair-sized room, a 112 or 171-type power valve should certainly be used in the last stage of audio-frequency amplification. If you select a 112-type power valve you have increased by four times the undistorted power output available for actuating the loudspeaker. But if you use instead a 171-type power valve you will increase the undistorted power output of your last stage, with respect to the loudspeaker, a factor of fourteen.

A very pleasing satin effect may be given any panel by observing the following procedure. After the panel has been drilled, lay it on a piece of newspaper which has been placed on a flat surface. Then with a fine grade of sandpaper, No. 0 or 00, sand the surface of the panel along its length, applying at the same time a liberal quantity of lubricating oil. Do not limit the strokes in sanding to less than the total length of the panel, or the satin effect will not be uniform. After the total surface has been covered, remove the surplus oil with a soft cloth, wash the surface with gasoline or a similar cleaning compound, and polish with a dry cloth. Under no circumstances use a coarse grade of sandpaper, since its application on the highly finished surface of the panel will gouge out deep scratches, which are virtually impossible to remove.

The Melbourne "Listener-in" says:—"Mr. James D. Seymour, who has been engaged for a season by 3DB (a Melbourne "B" class broadcast station) to sing popular and standard songs, is a newcomer to Melbourne. He hails from New Zealand, a country that has sent us many good vocalists. Mr. Seymour is the possessor of a resonant bass-baritone voice of pleasing quality, and was closely connected with various musical organisations in Dunedin, notably the Dunedin Choral Society, Burns Club, Gaelic Society, and the Dunedin Glee Club, to which latter he was bass soloist for a number of years, and of which he is a foundation member."

8.0: Town Hall chimes.
8.1: Orchestral music relayed from the Octagon Theatre Orchestra, under the direction of Mr. L. D. Austin.
8.11: Soprano solos—Miss Rita Holmes, (a) "Willow" (Goring-Thomas); (b) "Whither" (Schubert).
8.18: Pianoforte solo—Miss Alice Wilson, "First Movement of the Italian Concerto" (Bach).
8.24: Bass solo—Mr. J. Ferguson, "Love Leads to Battle" (Bounoncini).
8.28: Cello solo—Mr. Malcolm Robilliard, "Cavatina" (Squire).
8.32: Contralto solo—Miss Mary Pratt, "The Flight of Ages" (Bevan).
8.37: Orchestral music relayed from the Octagon Theatre.
8.47: Baritone solos—Mr. F. M. Tuohy, (a) "Till I Wake" (Woodford-Finden); (b) "Less Than the Dust" (Woodford-Finden).
8.54: Address—Pastor W. D. More, selected.
9.9: Soprano solo—Miss Rita Holmes, "A Birthday" (Woodman).
9.13: Pianoforte solo—Miss Alice Wilson, "Concert Study in D Flat Minor" (Liszt).
9.18: Cello solo—Mr. Malcolm Robilliard, "Chanson, Louis XIII" (Kreisler-Couperin).
9.23: Bass solos—Mr. J. Ferguson, (a) "Scots Wha Hae" (traditional); (b) "Within These Sacred Bowers" (Mozart).
9.30: Orchestral music relayed from Octagon Theatre.
9.40: Contralto solos—Miss Mary Pratt, (a) "Come, Sing to Me" (Thompson); (b) "When You and I Were Young, Maggie."
9.47: Pianoforte solos—Miss Alice Wilson, (a) "Puck"; (b) "Fairy Dance" (Greig).
9.51: Baritone solo—Mr. F. M. Tuohy, "The Word Was Once a Garden."
9.55: Cello solo—Mr. Malcolm Robilliard, "Pavane" (Kreisler-Couperin).
10.0: Close down.

Friday January 6th

1YA AUCKLAND (333 METRES)—FRIDAY, JANUARY 6.

3 p.m.: Afternoon session—Selected Studio items.
4.0: Literary selection, by Mr. Culford Bell.
4.30: Close down.
6.0: Children's hour.
7.0: Close down.
7.15: Talk—Mr. Geo. Campbell, "Motoring."
7.30: News and reports.
7.45: Close down.
8.0: Chimes.
8.1: Relay of orchestral overture from the Strand Theatre, under the direction of Miss Eve Bentley.
8.11: Vocal quartet—St. Andrew's Quartet, "In This Hour of Softened Splendour" (Pinsuti).
8.15: Bass solo—Mr. Arthur Colledge, "A Vagabond's Song" (Cundell).
8.20: Saxophone solos—Miss Marjorie Greening, (a) "Valse Vanite"; (b) "Popular Air"; (c) "Saxophobia."
8.30: Contralto solo—Miss Phyllis Gribben, "The Enchantress" (Hatton).
8.34: Elocutionary—Mr. J. F. Montague, (a) "Art of Kissing, by Everybody"; (b) "An Old Silk Dress" (R. Singer).
8.41: Piano and banjo duo—Mr. and Mrs. Hugh Morton, "Popular Medley."
8.46: Vocal duet—Messrs. R. Peter and A. Colledge, "Love and War" (Cook).
8.51: Relay from the Strand Theatre.
9.1: Weather forecast.
9.3: Vocal quartet—St. Andrew's Quartet, "O, Hush Thee, My Babe" (Sullivan).
9.8: Tenor solo—Mr. Robert Peter, "Something Scotch."
9.12: Soprano solo—Miss Adelaide Taylor, "Sing, Break Into Song" (Malinson).
9.16: Spanish and Hawaiian guitar and mandolin solos—Mr. Walter Smith, (a) "Pensee's Nocturne"; (b) "Old Folks at Home"; (c) "Honolulu Mary."
9.26: Recitation—Mr. J. F. Montague, "Recruiting Speech," by late Justice Alpers.
9.33: Banjo and piano duo—Mr. and Mrs. Hugh Morton, "Latest Melodies."
9.39: Vocal duet—Miss A. Taylor and Mr. R. Peter, "Enchantment" (Oliver).
9.43: Relay from the Strand Theatre.
9.53: Bass solo—Mr. A. Colledge, "The Two Grenadiers" (Schumann).
9.58: Vocal quartet—St. Andrew's Quartet, "Now, Ladies and Gentlemen, That's All" (Oliver).
10.2: A thought.
10.4: God Save the King.

2YA WELLINGTON (420 METRES)—FRIDAY, JANUARY 6.

3 p.m.: Afternoon session—Selected Studio items.
Chimes of the General Post Office clock, Wellington.
3.1: Selected gramophone items and progress results of Wellington v. Otago cricket match.
3.30: Lecture—Miss Marion Christian, of Wellington Gas Company, "Gas Cooking."
3.45: Selected gramophone items.
5.0: Close down.

NOW You can listen to the distant voices of the world!

RIGHT IN YOUR OWN HOME.

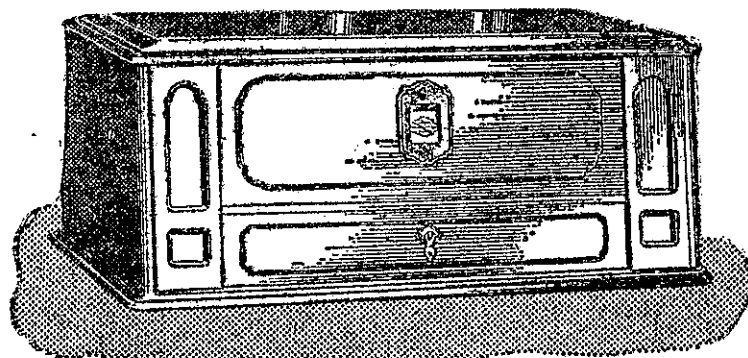
—The thrilling voice from old England.
Quaint song and speech from Holland.
Weird words and music from Soviet Russia.
Peppy jazz and queer quips from America.

All these things are yours with the
**NEW SILVER-MARSHALL SHORT
WAVE RECEIVER.**

If your dealer cannot tell you of this wonderful Receiver—
Write us for free details.

Bond & Bond Ltd.
AUCKLAND

**Premier
Tully**



COUNTERPHASE 6 AND 8 RECEIVER
Admitted the BEST

Installed recently for Commercial use by the leading N.Z. Newspaper Offices, including:—

CHRISTCHURCH "STAR" OFFICE
CHRISTCHURCH "SUN" OFFICE
AUCKLAND "STAR" OFFICE
AUCKLAND "SUN" OFFICE

The BEST WAS REQUIRED—

BREMER TULLY WAS INSTALLED!
"THE WORLD'S BEST"

Sole Canterbury Agents:

J. I. SMAIL

The Pioneer Radio
Firm
CAREY'S BUILDINGS.

COLOMBO STREET, CHRISTCHURCH.

Programmes Continued

— Copyright —

These programmes are copyright, but individual daily programmes may be published on day of performance.

- 6.0: Children's hour—Uncle Ernest. Gramophone selections for the kiddies. Violin solo, Cousin Orma, "Romance" (Jensen). Uncle Ernest sends birthday greetings. Pianoforte solo, Cousin Daphne, "Country Prices" (Quilter). Recitations, Cousin Zenocrate, (a) "The West Wind" (Masefield), (b) "Matilda's Music Lesson." Violin solos, Cousin Muriel, (a) "Petite Rhapsody Hongroise" (Brahms), (b) "Chanson, Louis XIII, and Pavane" (Kreisler). Humorous sketches, Cousin Natalie, (a) "The Bald-headed Man," (b) "Her First Party." Uncle Ernest, story time. Gramophone selections.
- 7.0: News session, market reports, and sports results.
- 7.40: Lecturette—Mr. D. G. Paris, of Wellington Centre, A.A.A., "Athletics."
- 8.0: Chimes of the General Post Office clock, Wellington.
- 8.1: Overture—"Evening Bells, Idyll, Op. 98" (Eilenberg).
- 8.5: Drawing-room evening by Miss Gwen Shepherd and party. Sextet—The company, "Click, Cluck" (Scott-Gatty).
- 8.12: Baritone solo—Mr. R. S. Allwright, "Four Jolly Sailors" (German).
- 8.16: Mezzo-soprano solos—Miss Alma Clegg, (a) "Ferry, Ahoy" (Brewer); (b) "If No One Ever Marries Me" (Lehmann).
- 8.20: Instrumental trio—Symons-Ellwood-Short Trio, "First Movement" from "Trio in D Minor" (Arensky).
- 8.30: Tenor solo—Mr. W. McKeon, "Myself When Young" (Lehmann).
- 8.34: Musical monologues—Miss Gwen Shepherd, (a) "Earthenware" (West-ern); (b) "Life" (Reynolds).
- 8.38: Violin solo—Miss Ava Symons, "On Wings of Song" (Mendelssohn-Achorn).
- 8.44: Contralto solo—Mrs. Fred. Collins, "The Little Blue Bay" (Del Riego).
- 8.47: Humorous recital—Mr. W. McKeon, "Monty: The Near East."
- 8.52: Baritone solo—Mr. Claude Moss, "To-morrow" (Keel).
- 8.56: Weather forecast.
- 8.57: Lecturette—Editor-Announcer, "Foreign Affairs."
- 9.12: Contralto solo—Mrs. Fred. Collins, (a) "Robin Adair" (Bond); (b) "An Eastern Lullaby" (Ring).
- 9.17: Instrumental trio—Symons-Ellwood-Short Trio, "Elegie" (Arensky).
- 9.27: Baritone solo—Mr. Claude Moss, "An Old French Toast."
- 9.31: Elocutionary—Miss Gwen Shepherd, "A Novel to be Read in Five Minutes."
- 9.35: Violin solo—Miss Ava Symons, "Savourneen Dellish" (Easthope Martin).
- 9.41: Mezzo-soprano solo—Miss Alma Clegg, "Boat Song" (Ware).
- 9.45: Humorous recital—Mr. W. McKeon, "The Collection."
- 9.51: Baritone solo—Mr. R. S. Allwright, "The Rooster" (Wells).
- 9.56: Sextet—The company, "Funiculi Funicula" (Denza).
- God Save the King.

3YA CHRISTCHURCH (306 METRES)—FRIDAY, JANUARY 6.

- 3 p.m.: Afternoon session—Selected Studio items.
- 4.30: Close down.
- 6.0: Children's hour—Big Brother. Bed-time stories, music, birthday greetings.
- 7.15: News and reports.
- 8.0: Chimes. Relay of orchestral selections from Crystal Palace Theatre Orchestra, under the direction of Mr. A. J. Bunz.
- 8.15: Tenor solo—Mr. Russell Sumner, "Serenade" (Schubert).
- 8.19: Contralto solo—Miss Belle Renaud, "Ashoo at Her Lattice" (Finden).
- 8.22: Instrumental trio—Christchurch Broadcasting Trio, "Andante Con Moto Tranquillo and Scherzo" from "Trio, Op. 49" (Mendelssohn).
- 8.32: Tenor solo and chorus—Mr. Russell Sumner and Misses Hamerton and Renaud, and Mr. Williams, "A Soldier's Scarlet Coat" (German).
- 8.36: Humorous recital—Miss Naare Hooper, L.T.C.L., "The Munt's Notes" (Bradshaw).
- 8.40: Soprano solos—Miss Frances Hamerton, L.A.B., (a) "Ah! Willow"; (b) "Shepherd, Thy Demeanour Vary" (Old English melodies), (Lane Wilson).
- 8.45: Cello solo—Mr. Harold Beck, "Nocturne, Op. 19, No. 4" (Tschaiowsky).
- 8.50: Baritone solo—Mr. T. D. Williams, "My Abode" (Schubert).
- 8.53: Contralto solo—Miss Belle Renaud, "Sleep Song" (Scott).
- 8.56: Vocal quartet—Misses Hamerton and Renaud and Messrs. Sumner and Williams, "O, Maiden Dearest" (Brahms).
- 9.0: Relay of orchestral selections from Crystal Palace Theatre.
- 9.15: Tenor solo—Mr. Russell Sumner, "Love Beneath the Moon" (Drigo).
- 9.19: Instrumental trio—Christchurch Broadcasting Trio, "Trio in Canon Form" (Coerne).
- 9.26: Vocal duet (contralto and baritone)—Miss Belle Renaud and Mr. T. D. Williams, "Nocturne" (Chaminade).
- 9.31: Recitals—Miss Naare Hooper, L.T.C.L., (a) selection from "The School for Scandal" (Sheridan); (b) "Matilda" (Belloc).
- 9.37: Soprano solo—Miss Frances Hamerton, (a) "A Pastoral" (Wilson); (b) "I'll Rock You to Sleep" (Stanford).
- 9.44: Instrumental trio—Christchurch Broadcasting Trio, "Rondo Alla Turca" (Mozart).
- 9.48: Baritone solos—Mr. T. D. Williams, (a) "Brian of Glenaar" (Graham); (b) "I Heard Your Voice" (Forester).
- 9.56: Cello solo—Mr. Harold Beck, "Minuet" (Mozart).
- God Save the King.

4YA DUNEDIN (463 METRES)—FRIDAY, JANUARY 6.

- 3 p.m.: Afternoon session—Selected Studio items.
- 3.1: Town Hall chimes.
- 3.15: His Master's Voice recital.
- 3.15: Address by Miss Sproston, of the D.I.C., "The Heavy Woman's Problem."
- 3.30: Afternoon tea music from the Savoy.
- 3.45: Studio music.
- 4.0: Music from the Savoy.
- 4.15: His Master's Voice recital.
- 4.30: Close down.
- 6.0: Town Hall chimes. Children's session—Big Brother Bill. Mr. Jesse Bonnell will show how animals talk to each other. Little Brother Ken will talk about "Boys' Rights," and Sister Olive sings some nursery rhymes. The "Happy Ditty" begins things, of course, letters and birthdays follow, and last, but not least, Big Brother Bill's family goes for a trip in the Wonder Car.
- 7.0: Close down.
- 7.15: News session.
- 7.30: Address on "The Recent Tour of the New Zealand Cricketers in Great Britain," by Mr. R. C. Blunt.
- 8.0: Town Hall chimes.
- 8.1: Tenor solos—Mr. Les. Dalley, (a) "The Boat Song" (Ware); (b) "Mignon" (d'Hardelot).
- 8.7: Pianoforte solo—Mrs. W. Munro, "Sonata, Op. 78, Second Movement" (Beethoven).
- 8.12: Soprano solo—Miss Roma Buss, "Linden Lea" (Barnes).
- 8.16: Recital—Miss Sheila Neilson, "The Ford."
- 8.20: Bass solo—Mr. J. B. Macpherson, "Old Barty" (Grant).
- 8.24: Pianoforte solo—Mrs. W. Munro, "Nocturne in E Flat, No. 2" (Chopin).
- 8.30: Mezzo-soprano solos—Miss Mollie Andrews, (a) "The Quail" (Beethoven); (b) "The Lilac Tree" (Gartlan).
- 8.37: Recital—Miss Sheila Neilson, "Cautionary Tales" (Belloc).
- 8.42: Tenor solo—Mr. Les. Dalley, "Ah! Moon of My Delight" (Lehmann).
- 8.47: Pianoforte solo—Mrs. W. Munro, "Caprice."
- 8.52: Soprano solos—Miss Roma Buss, (a) "One Morning Very Early" (Sanderson); (b) "Damon" (Strange).
- 8.59: Recital—Miss Sheila Neilson, "The Useful Cat."
- 9.4: Bass solos—Mr. J. B. Macpherson, (a) "The Windmill" (Nelson); (b) "The Lute Player" (Allitsen).
- 9.11: Mezzo-soprano solo—Miss Mollie Andrews, "The Spinning Wheel" (Schubert).
- 9.15: Dance music relayed from the Savoy.
- 10.0: Close down.

Saturday January 7th

1YA AUCKLAND (333 METRES)—SATURDAY, JANUARY 7.

- 3 p.m.: Afternoon session—Selected Studio items.
- 4.0: Literary selection by Mr. Culford Bell.
- 4.30: Close down.
- 6.0: Children's hour.
- 7.0: Close down.
- 7.15: News and sports results.

The experimenter is not always the proud possessor of a power valve, and yet he has often desired one. A reasonable substitute for a power valve in the last stage of audio amplification can be found in connecting up two ordinary 201-A type valves, with their plate and grid elements in parallel. In other words, an extra 201-A valve is connected to the plate and grid terminals of the last audio frequency amplifying valve. The filament of the extra valve is connected to the "A" battery in the regular manner through a ballast resistor or rheostat.

According to an American writer, a school requires a larger and better radio outfit than many private residences have, and the use of one of the latest and best receivers in a school creates a demand for better sets in the homes of the pupils. The adoption of radio by a school also influences these conservative persons who wait until a new article or method is well established before investing in it.



Photo, Elizabeth Greenwood.
MISS NGAIRE COSTER.

Miss Ngaire Coster is a mezzo-contralto singer who will be heard with the Ariel singers from 2YA on January 13. She has had a number of successes in competitions.

The tremendous amplification of the superheterodyne receiver makes it possible to cover long distances with a loop aerial, and this usually is tuned with a variable condenser. Sometimes the loop is tapped, so that more or fewer turns may be used.

"Can't we have a lecture on weather forecasting by one of our meteorological experts from 2YA, Wellington?" writes "Tiller" (Manawatu). "Many of us who have a special interest in weather effects would like to know how the meteorological experts arrive at their forecasts. I suggest that the lecture be put on during the night session so that we all will be able to hear it."

The principal of a big American radio manufacturing corporation recently stated: "Efficiency, simplicity, beauty—these are the characteristics of 1928 radio receivers, about the ultimate in meeting public requirements. Within the span of a few years, radio has been able to provide for the millions of listeners' sets that work well and look well. A single control supplants the multiplicity of dials which were required on the early receivers. A child can tune in for programmes that are of the highest artistic standard. Radio thus enters a new year with the confidence of the public."

Announcement of the use of radio in prospecting for gold and other minerals was made in the United States about a year ago. This method is being scientifically worked out, with the hope that it will prove of rich practical value. That radio waves will penetrate 500 feet or more of rock strata was indicated in recent tests by the Bureau of Mines in a mine at Caribou, Colorado. At a depth of 220 feet, Dr. E. E. clearly heard a musical concert broadcast at Denver, fifty miles distant. Reception from Denver at 550 feet depth was "mushy," but disturbed conditions were believed responsible.

In general distortion arises either from improper operation and adjustment of the receiving set and its associated equipment, or from imperfect design of parts in the set itself. When improper operation or adjustment is the cause the trouble may lie almost anywhere in the radio receiver. Given a high-grade amplifier system and a loud speaker adequate to handle the output of the receiver, distortion may yet exist because of failure to work within the power or voltage limitations of one or more parts of the receiver. The most frequent cause of curable distortion is overloading of the valves.

Marconi, the Italian inventor, discovered the principle of wireless telegraphy in 1895 when but 21 years of age. The Marconi Wireless Telegraph Company of America was the first company in America formed for the purpose of engaging in the transmission of messages by wireless. It was organized November 22, 1899, with a capitalisation of 10,000,000 dollars (\$2,000,000) of which 25 per cent. was owned by the Marconi's Wireless Telegraph Company, Ltd., a British corporation.

- 8.0: Chimes.
- 8.1: Relay of Municipal Band concert from Town Hall, under the conductorship of Mr. Christopher Smith.
- 9.30: Relay of dance music from Click-Clack Cabaret, by the Click-Clack Radio Orchestra, under the direction of Mr. Walter Smith.
- 11.0: A thought.
- 11.1: Close down.

2YA WELLINGTON (420 METRES)—SATURDAY, JANUARY 7.

- 3 p.m.: Afternoon session—Selected studio items.
- Chimes of the General Post Office clock, Wellington.
- 3.1: Selected gramophone items. Progress reports of cricket match, Wellington v. Otago.
- 5.0: Close down.
- 6.0: Children's hour—Aunties Dot and Gwen in dialogue of fun. Musical entertainment of fifteen minutes by Uncle Sid. Birthdays and chat by Aunties. Gramophone selection (march). Recitations by Roma and Edward, "Babyland," "Cousin Willie." Selected items. Gramophone selection.
- 7.0: News session, market reports, and sports results.
- 8.0: Chimes of the General Post Office clock, Wellington.
- 8.1: Overture—"The Vagabond King" (Friml).
- 8.6: Quartet—The Celeste Quartet, "Carry Me Back to Old Virginny" (Bland).
- 8.10: Instrumental trio—Symons-Ellwood-Short Trio, "Ave Maria" (Kahn).
- 8.20: Tenor solo—Mr. Edgar Swain, "E Lucran le Steelo" from "La Tosca" (Puccini).
- 8.24: Hits and harmonies—The Glad Idlers, (a) "Take Your Finger Out of Your Mouth" (Schuster); (b) "Greenwich Witch" (Confrey); (c) "Deep Elm" (Robison).
- 8.32: Contralto solo—Mrs. Edgar Swain, "Tommy, Lad" (Margerson).
- 8.36: Vocal duet—Miss Myra Sawyer and Mr. Wm. Boardman, "Give Me Thy Hand" from "Don Giovanni" (Mozart).
- 8.40: Piano and cello duet—Mr. Gordon Short and Mr. Geo. Ellwood, "First Movement, Grand Duo" (Gottner).
- 8.44: Soprano solo—Miss Myra Sawyer, "Butterfly Wings" (Phillips).
- 8.48: Vocal duet—Mr. and Mrs. Edgar Swain, "Caro Mio Ben" (Giorgani).
- 8.52: Hits and harmonies—The Glad Idlers, (a) "You Never Seem to Look My Way" (Osborne); (b) Medley of popular hits.
- 9.0: Bass solo—Mr. Wm. Boardman, "The Wanderer" (Schubert).
- 9.5: Quartet—The Celeste Quartet, "Down in the Coin Brake."
- 9.9: Dance and jazz numbers.
- 11.0: Close down.

3YA CHRISTCHURCH (306 METRES)—SATURDAY, JANUARY 7.

- 6 p.m.: Children's hour—Uncle Sam and Aunt Mary, birthday greetings, bed-time stories, and songs.
- 7.15: News and reports.
- 7.30: Sports results.
- 8.0: Chimes. Relay of orchestral selections from Liberty Picture Theatre Orchestra, under the direction of Mr. Ernest Jamieson.
- 8.15: Baritone solo—Mr. E. A. Dowell, "If Winter Come s" (Tennent).
- 8.19: Zither banjo solo—Mr. Jack Oxley, "You've Found a New Toy" (Long).
- 8.23: Vocal duet—Miss Mabel Thomas and Mr. David McGill, "O Terra Addio" from "Aida" (Verdi).
- 8.27: Instrumental trio—Christchurch Broadcasting Trio, "Two Movements from D Major Trio, Moderato leading to Allegro Appassionata and 'appiccio" (Reisiger).
- 8.38: Songs at the piano—Mr. E. A. Sargent, (a) "The Lure" (Bond); (b) "May I Print a Kiss?" (Bond).
- 8.44: Instrumental trio—Christchurch Broadcasting Trio, (a) "Miserere" from "Il Trovatore" (Verdi); (b) "Scherzo" (Schubert).
- 8.52: Soprano solo—Miss Mabel Thomas, "A Fors e Lui" from "La Traviata" (Verdi).
- 8.56: Tenor solo—Mr. David McGill, "A Dream" (Bartlett).
- 9.0: Weather forecast.
- 9.1: Relay of orchestral selections from Liberty Theatre.
- 9.16: Musical monologue—Mr. Alex. Johnson, "When You Figger It Out" (a Coster's philosophy).
- 9.21: Zither banjo solos—Mr. Jack Oxley, (a) "There's Everything Nice About You" (Wendling); (b) "The Scots Greys' March" (Ellis).
- 9.27: Baritone solos—Mr. E. A. Dowell, (a) "There's a New Star in Heaven To-night" (Brennan); (b) "My Dear Little Irish Mother" (O'Brien).
- 9.34: Soprano solo—Miss Mabel Thomas, "The Sweetest Flower that Blows" (Hawley).
- 9.38: Soprano and tenor duet—Miss Mabel Thomas and Mr. David McGill, "Had You But Known" (Denza).
- 9.41: Instrumental trio—Christchurch Broadcasting Trio, (a) "Andante Pathetique" (Tschaiowsky); (b) "Polish Dance" (Scharwenka).
- 9.50: Songs at the piano—Mr. E. A. Sargent, (a) "After Vavation" (Bond); (b) "Gay Little Cigarette" (Bond).
- 9.56: Tenor solo—Mr. David McGill, "Tis the Day" (Leoncavallo).
- 10.0: Humorous recital—Mr. Alex Johnson, "A Hen Minded Hen" (Fabian).
- 10.5: Relay of dance music from Caledonian Hall (by permission of the Canterbury Caledonian Society and Mr. Reg. Stillwell). Music by Jackson's Orchestra.
- God Save the King.

4YA DUNEDIN (463 METRES)—SATURDAY, JANUARY 7.

- 7.15 p.m.: News session.
- 7.30: Address on "Interior Decoration," by Miss M. Puechegud.
- 8.0: Town Hall chimes.
- 8.1: Orchestral music, relayed from the Empire Theatre Orchestra, under the direction of Mr. Chas. Parnell.
- 8.11: Tenor solos—Mr. Frank Stewart, (a) "When the House Is Asleep" (Haigh); (b) "Obstination" (De Fontenailles).
- 8.18: Cornet solo—Mr. George Christie, "Lucille" (Code).
- 8.25: Violin solo—Mr. A. Watson, "Sonata de Chiesa" (Corelli).
- 8.30: Contralto solo—Miss Irene Horniblow, "The Meeting of the Waters" (Irish).
- 8.34: Flute solo—Mr. Chas. E. Gibbons, "Casta Diva" from "Norma" (Bellini).
- 8.41: Orchestral music relayed from the Empire Theatre.
- 8.51: Baritone solo—Mr. Arthur Lungley, "O Tu Palermo" (Verdi).
- 8.56: Cornet solo—Mr. George Christie, "The Lost Chord" (Sullivan).
- 9.1: Mezzo-soprano solos—Miss Florence Sumner, (a) "Fair Spring is Returning" (Saint-Saens); (b) "Be Happy" (Drummond).
- 9.8: Violin solo—Mr. A. Watson, "Schlumenlied" (Schumann).
- 9.13: Tenor solo—Mr. Frank Stewart, "She is Far from the Land" (Lambert).
- 9.17: Flute solo—Mr. Chas. E. Gibbons, selection from "Faust" (Guonod).
- 9.27: Contralto solos—Miss Irene Horniblow, (a) "John Anderson, My Jo"; (b) "Oh! The Oak and the Ash."
- 9.34: Baritone solos—Mr. Arthur Lungley, (a) "Eleanore" (Coleridge-Taylor); (b) "Four by the Clock" (Mallinson).
- 9.41: Cornet solo—Mr. George Christie, "Shylock" (Lear).
- 9.47: Violin solo—Mr. A. Watson, "The Herd Girl's Dream" (Lebitsky).
- 9.52: Mezzo-soprano solo—Miss Florence Sumner, "Angus Macdonald" (Roedel).
- 9.56: Flute solo—Mr. Chas. E. Gibbons, "Sonnambula" (Bellini).
- 10.2: Close down.

Sunday, January 8th

1YA AUCKLAND (333 METRES)—SUNDAY, JANUARY 8.

- 3 p.m.: Afternoon session—Selected Studio items.
- 4.30: Close down.
- 5.45: Children's song service.
- 6.55: Relay of evening service from Auckland Unitarian Church. Preacher, Rev. Thornhill; organist, Mr. Woods.
- 8.30: Relay of municipal organ recital from Town Hall. Organist, Mr. Maughan Barnett.
- 9.30: A thought.
- 9.31: Close down.

2YA WELLINGTON (420 METRES)—SUNDAY, JANUARY 8.

- 6 p.m.: Children's service, conducted by Rev. Holland, Cambridge Terrace Congregational Church.
- 6.55: Relay of evening service from Taranaki Street Methodist Church. Preacher, Rev. Claren Eaton. Organist and choir-master, Mr. H. Temple White; deputy-organist, Mr. Eric Froggatt.

(Continued on Page 14.)

Mainly about Construction

BY "MEGOHM"

An Output Filter Choke

DETAILS FOR CONSTRUCTION

Many inquiries have been received regarding the construction of a choke coil for an output filter, and although a number of readers have had an old audio transformer on hand and have re-wound that, others find it necessary to either purchase or make one. A correspondent has written inquiring if the B eliminator choke coil would answer for filter purposes. "Megohm" had already tested that choke for the purpose and found it answer splendidly, but it is rather bulky for inclusion in a cabinet, and the choke now to be described is equally effective and efficient right through the musical scale, giving excellent reproduction. There is no advantage in unduly increasing the d.c. resistance of a choke coil, and to that end the gauge of wire is not made too fine, whilst with a closed core with gaps, it is possible to keep down the number of turns to a reasonable limit. This choke coil has been in use by the writer for many months, tried against several others, and always been at least slightly better.

WINDING THE COIL.

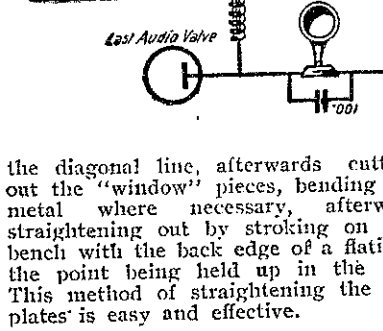
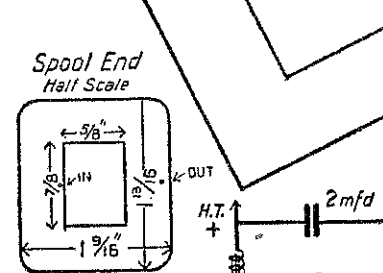
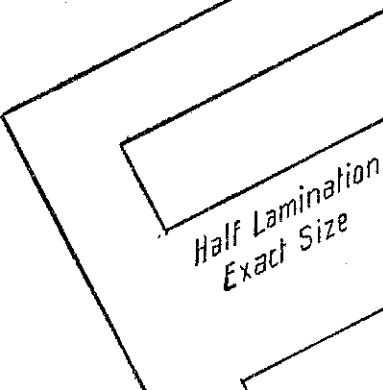
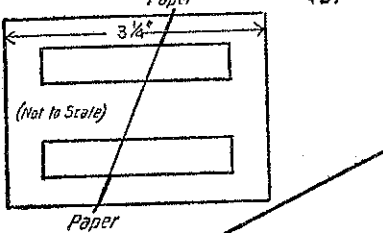
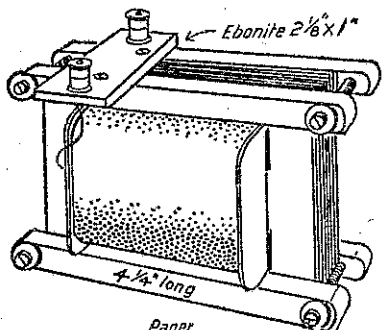
The spool is made on a wooden former 1/2 in. by 1/2 in. by 2 3/16 in. long. This is covered with one or two thicknesses of manila paper and ends of thin fibre or stout millboard fitted on and glued. The winding should be done in a jig and the spool ends supported in some way by cheeks fastened to the winding spindle, in order to prevent them being forced outwards by the wire during the process of winding. The beginning and end of the winding, which should be of thicker wire, are passed through holes in the spool ends. The spool is to be filled with 36's enamelled wire, over half a pound being required, which gives about 8000 turns.

The wire is run in irregularly in patches, piling up a certain thickness, say 1-1 1/2 in., and then passing along to another pile until the other end of the spool is reached. Then a strip of tissue paper is put round, care being taken that it closes up to the ends, as although the wire is being put on irregularly, one layer must not be allowed to come in contact with another by wires sinking down at the ends. This easily happens, especially if the spool ends are not well supported. When the spool has been filled and the lead-out wire soldered on and passed through the hole in the end, a covering of stout paper and then a piece of suitable fabric are put on to protect the winding.

THE LAMINATED CORE.

The core is built up of laminations of ordinary tin-plate, cut as shown, in full size, eighty pieces being required. The tin has the advantage of being thinner than black iron can be obtained, and thus serves to more efficiently suppress eddy currents in the core. Stalloy can be used, but it is not always procurable. One sheet of tin 28 by 20 inches will be more than sufficient for the laminations. The tin should be marked out into 80 squares 3 1/4 by 2 1/4 inches, these squares being cut out, after which a cardboard template is made of a complete lamination in one

piece, to be laid on each piece in turn and scratched round the two "windows" to mark their position. Now a piece of card is taken the size and shape of half lamination, but without the windows. This is used as a guide to scratch the diagonal line across each. Then cut each square right through on



The laminations are now to be shellaced with one coat on both sides, for which purpose shellac is dissolved in methylated spirits and applied with a brush. This coating of shellac is important, as its purpose is to insulate each lamination from the next.

When the shellac is thoroughly dry, laminations, all the same way round, are packed into one end of the coil, the last few being pushed in under the top one, and having the sharp corner cut off the central piece to prevent the manila being cut. A piece of strong paper is to intervene between the two ends of laminations where they meet outside the coil, so large enough pieces are placed there, while the laminations on the second side are packed into place. As many must be got in as possible, so that both lots are free from any looseness. The ends of laminations must both press against the paper, so that they are only separated by its thickness. This forms a gap in the iron, the object of which is to prevent magnetic saturation of the core by the direct current passing through the coil.

FINAL OPERATIONS.

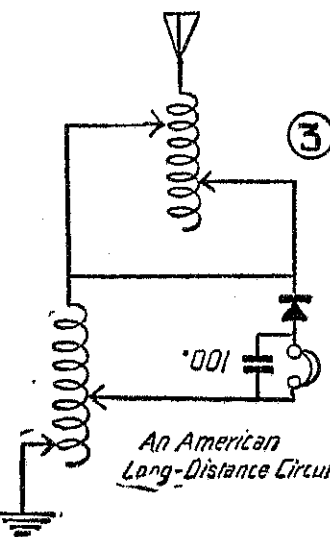
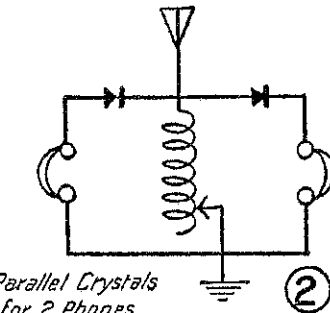
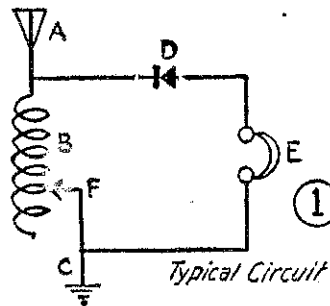
The wooden clamps, four in number, are 4 1/2 inches long and 7-16-inch square, drilled at each end to take a 3-8 brass bolt two inches long, about a half-inch of which can be cut off after all is assembled. A washer should be put under the bolt head to protect the wood, but at the other end the nut will be sufficient. A slip of ebonite about 2 1-8 by 1 1-8 inches is now screwed to the clamps and fitted with two terminals, to which the leads are connected underneath.

When completed and stood on end the choke occupies a floor space of about 3 by 1 1/2 inches, and, of course, the ebonite slip may be placed in any convenient position. A small diagram of the circuit is included.

The wooden clamps should be finished with the shellac applied with a piece of rag and rubbed. The clamping bolts must not be allowed to touch the ends of the laminations and so connect some of them together. If care and finish are put into the work the coil has quite a neat appearance. If desired the outside of the laminations may be finished with black cycle enamel.

Experiment may show that a higher value than .001 gives better results for the fixed condenser across the speaker. With no condenser there, tone is inclined to be harsh and thin. Too large a capacity causes wooliness.

A British wireless journal gives the following:—Don't throw your old and seemingly "dead" crystals away. They can be utilised by grinding them up into a coarse powder, mixing them with a quarter of their bulk of litharge, and adding a small sprinkling of fine, clean iron filings. Mix the components of the mixture together very thoroughly and then make it into a paste with water containing five drops of pure acetic acid to every ounce. Spread the crystal paste on the surface of small copper or brass discs, and allow them three days to dry. The crystal discs will afford great rectification if they have been so prepared.



Crystal Receiver Construction

GENERAL PRINCIPLES AND SPECIAL CIRCUITS

AN AMERICAN CIRCUIT.

Owing to its general simplicity and ease in both use and construction, the crystal set is bound to continue in popularity, and it makes a good appeal to those who have no time to attempt the construction of valve receivers and the accompanying mastery of technical details and theory.

The simplest possible circuit is shown in diagram No. 1, the circuit used in the "Record" crystal set which has given such good results. There are three ways of tuning the aerial coil that may be adopted. The first, simplest, and least costly is that shown in the diagram, whereby a slider, F, is arranged to move along the coil and make contact with the wires, a small amount of insulation being scraped off each to present a clean metallic surface in the track of the slider. This is theoretically a good method, as for long distance work it is always a good scheme to tune with the inductance as much as possible, in order to keep down the capacity of the aerial circuit.

A TYPICAL CIRCUIT.

In the diagram, A is the aerial, B the inductance, or tuning-coil, which is conveniently about 70 or 75 turns of No. 20's s.w.g. wire space-wound on a 3-inch diameter former which is afterwards removed, the wires being held together by celluloid strips to which they are cemented. C is the earth connection to either a water-pipe or to a metal plate or tin sunk in the ground five or six feet deep. D is the crystal detector, which may be of any kind, permanent carborundum, semi-permanent perikon, or a loose cat's-whisker and crystal, which latter give excellent results, especially for long-distance, but necessitate much fiddling about and loss of reception at times. E represents the pair or two or three pairs of headphones, but unless fairly near to a broadcast station each pair of 'phones added further weakens the volume of reception.

PARALLEL CRYSTALS.

In diagram 2 we have the same circuit, but the crystal and 'phones portion is duplicated on the opposite side. This arrangement necessitating an extra crystal, gives in two pairs of 'phones volume equal to that of one pair with the single crystal, and with two pairs each side the four 'phones would get the same volume as two with a single crystal. The reason for this is that the alternate waves not utilised by the first crystal, instead of being suppressed or wasted, are utilised by the second crystal, so that the circuit is then a full-wave rectifier. The connecting of the crystals is therefore important, and if the crystal side of one is connected to the aerial, then the cat's-whisker of the other is connected to it. If the connections to one pair of headphones are altered, so that one ear-piece is connected respectively to each crystal, then double volume is obtained.

Diagram No. 3 shows an American circuit for which good long-distance achievements are claimed. The circuit is not an expensive one to experiment with, as a couple of 75-turn coils, three inches in diameter, tuned each with two sliders, are all that is required in addition to the 'phones, 'phone condenser, and crystal. This circuit will probably be more selective than the average.

OBTAINING SELECTIVITY.

Selectivity is gained by the employment of loose-coupling between the aerial coil and a separate secondary coil, which is not directly connected to the aerial circuit, but is placed close to the aerial tuning coil, in such a way that the distance between the two coils can be varied. The energy rectified by the crystal is that transferred across the space between the two coils, and it will be found, therefore, that this distance is important, and slight modifications will often eliminate undesired signals, but will leave the broadcasting quite clear.

This coupling is most conveniently carried out by the use of plug-in coils, mounted on a holder with provision for varying the coupling.

There are innumerable variations of crystal circuits that are worth a trial, and some experimenters will find a particular one that gives them best results, whilst others, differently located, will find success with an entirely different hook-up.

With a coil or two, a variable condenser, a pair of 'phones, and a good crystal, it is possible to try out a variety of circuits, provided one has the time at disposal in which to make the changes and carry out the testing. Probably many crystal users would find radio even more interesting if they went in seriously for experimenting in the same way as many valve enthusiasts do.

Next week a constructive article will be given dealing with the R.R. SELECTIVE CRYSTAL SET.

Automatic or fixed rheostats are not satisfactory with type 199 tubes. There is apt to be an overload on the filament when fresh, dry cells are installed.

When a 201A tube is used in the last stage audio the best results will be obtained for loudspeaker when employing a plate voltage of 135 to 180 volts, but the proper grid bias must be used—from 7.5 to 9 volts. The lower bias will give a better tone at 135 volts, and the higher one at 180 volts. With a 201A tube in the first stage audio, 90 volts on the plate is correct, with a 4.5 volts bias.

Occasionally tighten all nuts on terminals and components. Loose terminals can cause quite a lot of noisy and weak reception.

TO BUILDERS OF RADIO SETS

When you have built your own set, call upon us, and we will make you a cabinet at a reasonable cost.

FLANN AND COPP,

5 STURDEE ST., Off Dixon St. WELLINGTON.

UPKEEP EXPENSE

Every Radio owner wants to cut it to the bone. That is why you should insist upon having the opportunity to exercise your own preference by choosing Vesta Batteries.

BATTERIES

Vesta "A" and "B" Batteries are selected to replace original equipment in very much the same way a "Cord" type is bought to replace a "fabric." The Vesta "Costs less per month of service."

When buying a "Set" you are entitled to ask for the best equipment—Therefore have your dealer supply both "A" and "B" Vesta Batteries.

Sole New Zealand Distributors:

E. SIME & CO. LTD.

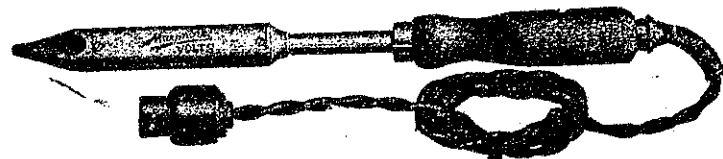
148 WAKEFIELD STREET, WELLINGTON.

SILVERTOWN RADIO ACCESSORIES

BUY BRITISH GOODS

Interval transformers, 22/6 each
Straight line Condensers—
.0005, 13/- each
.00025, 11/6 each
Variable Condenser, Ebonite ends— 9/6 each
Ebonite Panels, 24 x 7 x 3-16, 11/-; 21 x 7 x 3-16, 9/6; 19 x 7 x 3-16, 9/-
Filament Rheostats, 30 ohm and 6 ohm, 6/- each
Antimicrophonic holders— 3/- each
Silvertown Speakers, 70/- each

165 MANCHESTER STREET, CHRISTCHURCH.
SILVERTOWN CO.,



ELECTRIC SOLDERING IRONS.

	(Post Free)		
Radio Pattern	No. 10026	14/6	15/2
Light Duty	No. 10020	17/6	18/2
Medium Duty	No. 10022	21/-	22/-
Heavy Duty	No. 10027	25/-	26/-

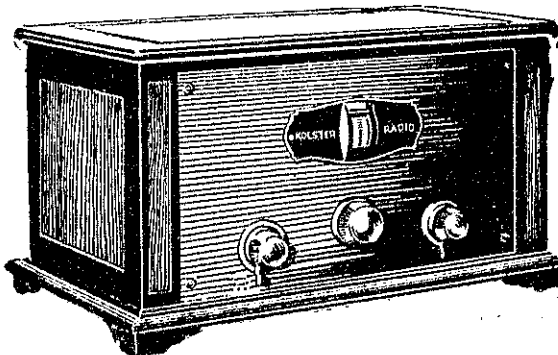
Obtainable all stores, or write:

McLEAN & ARCHIBALD

New Zealand Agents.

29 WILLIS STREET, Box 940. WELLINGTON.

KOLSTER RADIO



Hearing a Kolster 6 Valve Set will make you dissatisfied with anything less.

Let us demonstrate, without obligation, this latest product of Federal-Brands.

PRICE (Set only): £30

INTERNATIONAL RADIO CO. LTD.

FORD BUILDINGS AUSTRALASIAN AGENTS. WELLINGTON.

(Constructing the Crystal Receiver.)

THE WORLD and RADIO

New Zealand Administration on Sound Basis

The International Convention was attended by seventy-six different radio administrations, and lasted a considerable time. It was naturally a difficult matter for all the countries represented to meet on the common basis of understanding, but, thanks to the strenuous work of the various committees, most of the major problems were successfully tackled.

"The conference," says the report, "was faced with a bulky volume of proposals, many of which seemed incapable of reconciliation. Upon the various sub-committees devolved the task of reconciling these conflicting issues, of forming unique texts that would not only satisfy existing conditions, but would also safeguard the developments and discoveries which are constantly being introduced, and which might at any time radically modify existing practice. Our delegate was appointed to the following sub-committees:—Technical, tariffs, mobile and special services, general regulations, code language. All delegates were ex-officio members of the convention committee, and of the plenary sessions. As committees often met simultaneously, it was impossible for him—being the sole New Zealand delegate to attend all meetings, but minutes of all proceedings have been obtained, and these will be of value in the interpretation of regulations, the full purport of which might otherwise be obscure.

SPIRIT OF COMPROMISE.

"The unanimity that was ultimately obtained on the various proposals was made possible only by lengthy discussion, and by a commendable spirit of compromise and good-will, which reflected the greatest credit on such a cosmopolitan gathering, and was an interesting commentary upon the possibilities of international agreement, even in the presence of widely divergent views. The resolutions arrived at form a bulky volume, covering, as they do, all phases of radio communication, and regulating the procedure to be observed and the technical features to be recognised, in the practice of radio-frequency signalling.

"These regulations and convention articles are being printed, and will shortly be circulated for general guidance. In anticipation of this issue I am briefly outlining herein a number of features in which the New Zealand administration is more or less directly interested.

FREQUENCY ALLOCATIONS.

"Prevention of interference between stations of all classes and of all nationalities has engaged the earnest attention of the conference, and has been one of the most difficult problems. This also applies to the allied duty of allocating the available signalling frequencies among the many classes of radio services now being effected. The great growth in mobile services (ships and aircraft) is now making big demands upon the common signalling medium, and it was no easy task to satisfy all legitimate requirements. In 1912 no one could possibly have anticipated the great expansion which has taken place

The recently-held International Radio and Telegraph Convention, a report of which has been submitted by Mr. A. Gibbs, M.I.E.E., Chief Telegraph Engineer to the Post and Telegraph Department, shows how sound is the basis of administration of radio in the Dominion. This conference is the first to be held since 1912, and has had as its aim the straightening out of radio transmission generally, in order to lessen interference. In future, broadcasting stations are to be confined to a wavelength of 200 to 545 metres, on which basis all of our New Zealand stations are at present operating. The report which we give below shows the steps which are to be taken for the prevention of interference, and deals with the gradual elimination of spark installations. A feature of special interest is the reservation of a wave band to be reserved solely as a distress signal band.

in radio communication, and the many uses to which radio signalling would be applied. Ships, aircraft, submarines, land stations, beacon and direction-finding stations, picture transmission, broadcasting, all had to be provided for, and it was with no little difficulty that the available signalling channels were allocated to meet the needs of the art.

A comprehensive allocation of frequencies to the different services has now been made, and it is believed that this schedule will do much to reduce interference and multiply, as far as possible, the avenues open to the transmission of intelligence by means of electromagnetic waves.

"Administrations are required to exercise every care to avoid mutual interference, and to this end shall confer as may be necessary with a view to minimising the same, especially in the case of adjacent countries carrying on similar services in the same wave bands.

SPARK INSTALLATIONS.

"The use of damped waves (spark installations) is to be gradually but seriously curtailed. Spark transmitters, by reason of an inherent breadth of wave band and consequent heavy demand upon the already too limited channels of communication, are now regarded more or less as an evil which must be eliminated as soon as such action can be warranted on economic grounds. To this end the following proposals were adopted:—

(a) No new spark installations are to be made on land stations and existing land stations are to be modernised as soon as possible.

(b) From January 1, 1930, no new spark installations may be made on ships or aircraft unless of low power (less than 300 watts primary input).

(c) No spark transmitters shall operate above 800 metres except as provided for existing land stations referred to in (d).

(d) From January 1, 1935, all land station spark operation shall cease.

(e) From January 1, 1940, all spark operation of whatever character must cease.

"The only exceptions to the above are stations which by reason of location, etc., are incapable of interfering with the conduct of public radio correspondence.

SPECIAL DISTRESS BAND.

"With such insistent demands upon the ether brought about by the growth of national and international radio traffic, it was no easy matter to make adequate provision for ensuring the safety of life at sea by means of radio distress signalling. The demand of traffic and the watch for distress signals are somewhat difficult factors to reconcile, and to a large extent are mutually con-

flicting. It is, however, worthy of note that this subject received the most careful and preferential treatment. In spite of the problems mentioned, this early and humanitarian application of wireless signalling has been placed on a more satisfactory footing than was formerly the case.

It may confidently be expected that the service rendered to ships in distress will be even more dependable and reliable—if that be possible—than the remarkably efficient and valuable services rendered in this connection in the past. As a contribution to this end the wave band from 580 to 620 metres is to be reserved almost entirely as a calling and distress signal band.

SPECIAL NEW ZEALAND CON- SESSION.

"A special concession was made to New Zealand by the convention with respect to its home trade ships of small tonnage. These vessels, in accordance with New Zealand marine laws, are compulsorily fitted with wireless apparatus, with the main object of ensuring the safety of the passengers and crew. New Zealand holds a somewhat unique position in requiring ships of such small tonnage, if carrying nineteen persons or more, to be equipped with wireless apparatus. In the absence of international regulations that would appropriately cover such cases, and not impose impracticable requirements, local regulations were made in New Zealand in 1925 permitting the installation of comparatively low-power equipment on such small vessels, and considerably modifying the operating qualifications compared with those required of larger sea-going ships.

While sympathetic with the objects of the New Zealand Administration, it was the general feeling of delegates that the time had arrived when, in the interests of the prompt disposal of traffic in an already congested medium, the convention would, as a general principle, have to impose more instead of less rigorous conditions upon the operating personnel of ships' installations.

"Overtures made by shipping companies in other parts of the world to relax the operating conditions had always been consistently declined; it had to be admitted that any movement to degrade the standard of operating would have a serious effect upon the conduct of traffic and the general efficiency of radio communication.

PERIODICAL TESTS.

It was, however, pointed out that these small New Zealand coastal vessels were equipped almost entirely in the interests of safety of life, and were permitted to engage in public correspondence only in matters of maritime urgency; that the conditions under which such vessels operate render the employment of a full-time and fully qualified wireless operator impracticable and unnecessary; that the infrequent use of the apparatus reduces interference with public and other radio correspondence to a minimum; that these ships are engaged upon a somewhat hazardous service, and should be fully entitled to the security afforded by a wireless installation, even though not carrying a high-grade operating personnel, and that already such installations had been justified by the saving of human life.

In view of the above arguments it was ultimately and unanimously decided to meet the case by a special reservation permitting New Zealand coastal ships of this class to carry a modified installation and to be operated by ships' officers fulfilling the requirements which the New Zealand Government deemed best suited to the special circumstances of the case. It

was agreed in this connection that periodical tests would be made to ensure that the standard imposed was being properly maintained.

THE BROADCAST BAND.

"The wonderful strides made by radio telephone broadcasting during recent years rendered it imperative to make due provision for this most popular application of science to the entertainment and instruction of mankind. It further required the curtailment of long-wave stations—fortunately non-existent in New Zealand—which were seriously encroaching upon the frequencies required for mobile and point-to-point services. Broadcast stations are, in future, to operate between 200 and 545 metres. This is the wave band in use in New Zealand, and in this and certain other respects this administration has been fortunate in being able to anticipate the trend of development and thereby avoid any considerable alteration to existing equipments, and the expense thereby involved.

Provision has been made for ship-stations to operate on longer waves than at present with a view to reducing the interference now being caused to broadcast listeners.

AMATEUR WORK.

"The regulation of amateur transmitting stations and the finding of signalling room for these non-commercial services were the subject of considerable discussion. In this connection the policy of New Zealand has been a generous one, and has many features in common with that of the United States of America and Canada, where amateur experimentation has been encouraged, and has reached a high state of development. Many other countries viewed this non-professional radio work with a good deal of misgiving, and were disposed to give but scant encouragement to the amateur experimentalist to pursue his study and practice of high-frequency signalling.

The final result—although not all that could have been desired by the amateur radio world now totalling about 25,000 devotees—was, in my judgment, a reasonable compromise. Ample scope can be made available to the amateurs of New Zealand for the prosecution of their work.

"No doubt they will continue to respect the privileges afforded and the responsibilities involved, and do their share to contribute to the data already accumulated with respect to radio communication on low power over a wide range of distance and frequencies.

TECHNICAL DEVELOPMENT.

"A Consultative Technical Committee has been formed to consider such features as may be submitted for ruling or interpretation, and to watch the technical developments that are like to in-

fluence future regulations. This is a new departure, which will be watched with interest.

"It was pleasing to note that the practice of New Zealand in connection with the administration of the regulations of the 1912 Convention gave no grounds for criticism.

On the contrary, the standard set by this Administration for the technical efficiency of its stations both ashore and afloat, and for the qualifications of their operating personnel, proved to be a high one, and compared very favourably with that of older and more highly-developed radio countries.

KEEPING PACE.

"In order to keep pace with the radio developments now taking place, and to take full advantage of the same," the report concluded, "it will be increasingly necessary for the New Zealand Government to extend its activities in the field of radio signalling, and to make a more serious effort to keep pace with modern research.

The time has clearly arrived when, in order to administer satisfactorily the responsibilities of a quickly expanding and highly scientific art, there must exist a body well equipped with the latest technical measuring apparatus, and possessing, in addition, a qualified and specialised staff capable of keeping abreast of scientific progress in the application of radio frequency to modern signalling practices.

"It is to be hoped that the newly-formed Scientific and Industrial Research Department will be able to devote some time to the unsolved scientific problems of radio transmission calling for treatment in the Southern Hemisphere, and that collaboration with this department and its practical resources will furnish a useful and economical means of contributing to the rapidly accumulating store of knowledge of the ether as a transmission medium."

STATIC "ELIMINATORS"

Inventive means for minimising static in radio reception are embodied in approximately a hundred United States patents, granted up to the present. These contrivances, so-called "static eliminators," vary in character and magnitude from improvised violin strings, which are unresponsive to atmospheric disturbances, to apparatus resembling a miniature cannon and which is so cumbersome as to require a motor truck for its transportation.

Since the first patent relating to a separation of atmospheric disturbances from radio signals was granted to Dr. Reginald A. Fessenden, a quarter of a century ago, inventive minds have sought a device that would completely eliminate static. Their efforts have been only partially successful; many instruments and methods reduce this form of interference, but no device has yet been designed that will completely reject or suppress static. This fact was recently emphasised in an editorial written by Hugo Gernsback, editor of the New York "Radio News," in which it was stated that an electrical company had made the gesture of offering a bounty of 1,000,000 dollars (\$200,000) for a simple, practical, and inexpensive static eliminator.

SPECIAL TENNIS BROADCAST

WORLD'S CHAMPIONS AT PLAY

Something out of the ordinary is promised from 2YA on January 17 and 18, when a broadcast description of tennis played by the French team at Miramar, will be "put on the air." The French team comprises M. Borotra, M. Brugnon, and M. Boussus, these players ranking amongst the five leading players of France. They have been matched against champions in South America during the last few months, but are now on their way to New Zealand. So far no definite arrangement has been made as to the nature of the games, but in any case they will attract the interest of tennis enthusiasts from one end of New Zealand to the other. Tennis lends itself to accurate and descriptive broadcasting, and the games should be keenly followed by thousands of listeners.

SIMULTANEOUS PRO- GRAMMES

CATERING FOR TASTES.

Recent statements by the British Broadcasting Corporation indicate that that organisation has decided to begin the alteration of its system to permit of the transmission of alternative programmes. As in New Zealand it has been found difficult to cater for all tastes in music. Lovers of classical music have complained when they have been obliged to listen to dance music, and jazz enthusiasts have been equally dissatisfied when they were obliged to listen to programmes of a more serious nature than those they desired. Some time ago an effort was made in America to overcome this trouble by building stations in duplicate, so that when one was transmitting light music, the other was providing a programme of classical music. Two different transmitting stations and studios and two different transmission wave-lengths were, of course, necessary. The British Broadcasting Corporation investigated the results obtained in American experiments, and its engineers are satis-

fied that the dual transmission is the only method by which one of the greatest problems in providing programmes can be overcome. Accordingly arrangements have been made for the conversion of the main stations for dual transmission.

A Costly Innovation.

New Zealand, with its limited population of broadcast listeners, is not in a position to expect the dual programme innovation, and even in Australia, with its hundreds of thousands of listeners, the expense of such a system precludes its introduction. A suggestion has been made, however, that in Melbourne and Sydney, where there are two or more broadcast stations, there should be some co-ordination in the compiling of programmes so that two stations in each city shall not transmit high-class, or lighter music, simultaneously. An Australian writer says:—"The only excuse there can be for the presence of two powerful stations in one centre is that their programmes should be so co-ordinated to provide an improved service for listeners. If this is not done one of the two stations would be far better in some other centre where there is at present no station in existence."

RALEIGH RADIO

A FEW FACTS CONCERNING RALEIGH RADIO

RALEIGH Radio are the largest Radio manufacturers in the British Empire.

RALEIGH Radio has its own expert research and engineering departments.

RALEIGH Radio is one of the six companies who have exclusive access to the largest pooled patent resources in the whole of Canada.

RALEIGH Radio plant has a production capacity of 1200 Radios a day.

RALEIGH Radio Receivers are designed and built to excel in tone quality, simplicity of operation, selectivity and beauty.

RALEIGH Radio is now available to those discriminating New Zealand listeners who demand the highest standard of British workmanship in Radio.

A range of attractive models is now on view at—

BRITISH IMPERIAL RADIO CO.,

236 Lambton Quay, WELLINGTON. 'Phone 42—412

Economise!

Use the new Self-Regenerative "B" Battery, with 50 per cent. longer life. Genuine Leclanche Type. Made by the reputable British firm of Ripaults, Ltd. And note the price—45 volt, 13/6, Posted.

Gillilan Distributors:

J. A. MALCOLM,

BOX 6, TAUPIRI, WAIKATO.

WE SAVE YOU MONEY ON RADIO LITERATURE

MAGAZINE DEPT.
BOX 62 : PUTARURU
Radio, M., 15/-; Radio News, M., 15/-; Radio Call Book, Q., 9/-; Radio Broadcast, M., 20/-; Radio Engineering, M., 12/6; Q.S.T., 15/-; Money Making, M., 8/-; Amazing Stories, M., 15/-; Boy's Life, M., 12/6; Radio Record, W., 10/-; Radio Record with Radio News, 24/-; Popular Radio, 15/-; Popular Radio with Radio Record, 24/- All subscriptions per annum, post paid. Single copies not sold at above rates. Please remember we are at your service and that we can quote the best possible prices on any magazine published. Be early. This Month's Supplies Limited.
MAGAZINE DEPT.,
BOX 62 : PUTARURU.

Programmes Continued

(From page 11.)

8.30 (approx.): Studio concert.
Vocal quartet—The Wm. Renshaw Quartet, "O Gladsome Light" from "The Golden Legend" (Sullivan).
Tenor solo—Mr. Wm. Renshaw, recitative and air, "Sing Ye Praise" from "Hymn of Praise" (Mendelssohn).
Instrumental quartet—Symons-Ellwood String Quartet, "Minuet" from "C Minor Quartet" and "Finale" from "C Minor Quartet" (Beethoven).
Soprano solo—Mrs. Amy Dunn, "With Verdure Clad" from "Creation" (Haydn).
Baritone solo—Mr. Wilbur Davies, "Lord God of Abraham" from "Elijah" (Mendelssohn).
Instrumental quartet—Symons-Ellwood String Quartet, "Largo" (Handel).
Vocal quartet—The William Renshaw Quartet, "How Lovely Are the Messengers" from "St. Paul" (Mendelssohn).
Contralto solo—Miss Nora Greene, "O, Rest in the Lord" from "Elijah" (Mendelssohn).
Cello solo—Mr. Geo. Ellwood, "Two Norwegian Folk Songs" (with string accompaniment).
Vocal quartet—The William Renshaw Quartet, "F'er the Silvery Lamps Are Lighted" (Vincent).

3YA CHRISTCHURCH (306 METRES)—SUNDAY, JANUARY 8.

5.45 p.m.: Children's song service, by Uncle Sam, assisted by cousins from the Congregational Sunday School, Tennyson Street, Beckenham.
7.0: Relay of evening service from Union Methodist Church, Selwyn Street, Addington. Ministerial steward, Mr. J. H. Jones; organist, Miss D. Down.
8.15: Studio concert.
9.0: Close down.

4YA DUNEDIN (403 METRES)—SUNDAY, JANUARY 8.

5.45 p.m.: Children's song service, by Big Brother Bill and a children's choir.
7.0: Relay of evening service from Knox Church.
8.15: Relay from St. Kilda (weather permitting) of concert by the St. Kilda Band. Conductor, Mr. James Dixon.
9.15: Close down.

ENERGY ROBBERS

ABSORPTION BY ELECTRIC LINES.

Broadcast listeners as a body have very little knowledge of the many factors which militate against successful transmission. Even electric lines running in proximity to a broadcast station can sap some of the energy sent out from the aerial.

An American authority states:—"Electric light lines or door bell wires running parallel to a transmitting aerial will often pick up a quite heavy current when the transmitter is operated. The amount of current thus absorbed by the electric light wires is just that much energy stolen from the transmitter."

Absorption Demonstrated.

This absorption is particularly troublesome on the short amateur wavelengths, because the natural period of the aerial formed by the door bell wires is often the same as the wave-length of the transmitter. Some time ago, the writer found that when the transmitting key of his CW set was closed, an electric light in the garage, about thirty feet away, lighted to nearly full brilliancy. The wires from the house to the light ran parallel to the aerial and directly below it. The current induced in these wires by the transmitter was pure loss. When the wires were put in metal conduit and buried in the ground the trouble stopped; and the aerial current of the transmitter jumped from one ampere to three amperes, after the transmitter had been returned slightly."

FREE TO SMOKERS.

A VALUABLE and interesting booklet has been published by a reputable firm for the benefit of smokers. This booklet is full of instructive information, and contains extracts from statements made by some of the highest authorities in the medical world. Every smoker should read this booklet, which will be posted free on request.

HOME WELFARE PROPRIETARY,
4J Willis Street,
WELLINGTON.

BRITISH RADIO GOODS

A bit better quality;
A bit cheaper;
In short "a job!"

You get them from:

HARTLE & GRAY,

CUSTOMS ST., AUCKLAND.

S-O-S

TRAVEL IN COMFORT BY CAR

WELLINGTON—PALMERSTON
NEW PLYMOUTH

Use Our Booking Offices in Advance.
51 Willis Street, WELLINGTON.
Telephone 45-842.

Australia "On the Air"

PROGRAMMES FOR THE WEEK

For the benefit of listeners who wish to hear Australia during the present week, we give the programmes of 2BL, Sydney (353 metres). Specially attractive programmes are listed for New Year's Eve.

WEDNESDAY, DECEMBER 28.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus. 8.3: King's Mandolin Orchestra. 8.10: Miss Mildred Hansen (soprano). 8.17: Miss Nell Crane (comedienne). 8.24: Mr. C. Weatherley (instrumentalist). 8.31: The Canterbury District Band (bandmaster: Mr. Stan Nicholls), broadcast from Baker's Hall, Campsie. 8.51: Mr. Herbert C. Hinchcliffe (baritone). 8.58: Weather report and forecast, by courtesy of Mr. Mares, Government Meteorologist. 9.0: G.P.O. clock and chimes. 9.11: The Canterbury District Band. 9.21: Miss Mildred Hansen. 9.28: Miss Nell Crane. 9.35: King's Mandolin Orchestra. 9.42: Mr. Herbert C. Hinchcliffe. 9.49: Mr. C. Weatherley. 9.56: Resume of following day's programme. 10.0: G.P.O. clock and chimes; Broadcasters' all sports expert will talk on general sporting. 10.15: Romano's Dance Orchestra, under the direction of Mr. Merv. Lyons (broadcast from Romano's). 11.30: G.P.O. clock and chimes; National Anthem.

SATURDAY, DECEMBER 31.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus. 8.3: Special dance night. During intervals between dances humorous and popular items will be broadcast from the studio. 12.0: G.P.O. clock and chimes; National Anthem.

SUNDAY, JANUARY 1.

7.0: Service broadcast from Peter-sham Baptist Church. 8.30: Mr. Alfred Wilmore (tenor). 8.37: Mr. Gordon Rodda (pianist). 8.44: Miss Pauline Harford Foster (soprano). 8.51: Mr. Moore McMahon (violin solos). 8.58: Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. Resume of following day's programme. 9.0: G.P.O. clock and chimes. 9.1: Mr. Herman Tremayne (basso). 9.8: Mr. Frank Hatherley (dramatic artist). 9.16: Miss Mary Neal (mezzo contralto). 9.23: Mr. Gordon Rodda. 9.30: Mr. Frank Hatherley. 9.37: Mr. Norman Wright. 9.44: Miss Pauline Harford Foster. 9.51: Mr. Moore McMahon.

WEDNESDAY, JANUARY 4.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus. 8.3: Recital broadcast from the Straube Salon. 9.0: G.P.O. clock and chimes. 9.1: Broadcasters' all sports expert will talk on general sporting. 9.16: The Canterbury District Band (Bandmaster, Mr. S. Nicholls), broadcast from Baker's Hall, Campsie. 9.36: Dorothy Manning and Harry Graham in song and story. 9.51: Miss Edna Lister (contralto). 9.58: The Canterbury District Band. 10.8: Miss Edna Lister. 10.15: Resume of following day's programme; Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 10.20: Romano's Dance Orchestra, under the direction of Mr. Merv. Lyons, broadcast from Romano's Cafe. 11.30 G.P.O. clock and chimes; National Anthem.

THURSDAY, JANUARY 5.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus; An hour's programme presented by Home Recreations Limited. 8.3: The Salomona Dance Orchestra. 8.13: Miss Nell Crane (comedienne). 8.20: The Salomona Dance Orchestra. 8.30: Mr. Warwick McKenzie (violinist). 8.37: The Salomona Dance Orchestra. 8.47: Miss Hilda Walker (soprano). 8.54: The Salomona Dance Orchestra. 9.0: G.P.O. clock and chimes. 9.1: The Marickville Salvation Army Band (Bandmaster, Mr. N. H. Knight), broadcast from Wemyss Street, Marickville. 9.21: Miss Nell Crane. 9.28: Mr. Warwick McKenzie. 9.35: Miss Hilda Walker. 9.42: The Marickville Salvation Army Band. 10.2: Comedy sketch, by Mollie Raynor and Jack Beattie. 10.17: Resume of following day's programme; Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 10.20: Cyril Kaye and the Wentworth Cafe Orchestra, broadcast from the ballroom of the Wentworth. 11.30: G.P.O. clock and chimes; National Anthem.

FRIDAY, JANUARY 6.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus. 8.3: Broadcasters' light orchestra, under the direction of Mr. J. Knight Barnett. 8.13: Miss Marjorie Skill (soprano). 8.20: Miss Mary Charlton (piano solos). 8.27: Mr. R. Aedler Scott (tenor). 8.34: Miss Dulcie Blair (violinist). 8.41: Miss Mab Fotheringham (soubrette). 8.48: Broadcasters' light orchestra. 8.58: Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 9.0: G.P.O. clock and chimes; Resume of following day's programme. 9.4: Broadcasters' light orchestra. 9.14: Miss Marjorie Skill. 9.21: Miss Mary Charlton. 9.28: Mr. R. Aedler Scott. 9.35: Miss Dulcie Blair. 9.42: Miss Mab Fotheringham. 9.49: Broadcasters' light orchestra. 10.0: G.P.O. clock and chimes; The sporting editor of the "Sun" will talk on the prospects of Saturday's racing. 10.15: Romano's Dance Orchestra, under the direction of Mr. Merv. Lyons, broadcast from Romano's. 11.30: G.P.O. clock and chimes. National Anthem.

SATURDAY, JANUARY 7.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus. 8.3: Special dance night: Cyril Kaye and the Wentworth Cafe Orchestra. During intervals between dances humorous and popular items will be broadcast from the studio. 12.0: G.P.O. clock and chimes; National Anthem.

SUNDAY, JANUARY 8.

7.15: Service broadcast from Chalmers Presbyterian Church. 8.30: Recital by North Sydney Tramway Band, broadcast from Manresa Hall, North Sydney. 9.15: From the studio: Miss C. L. Robertson (elocutionist). 9.22: Mr. Lloyd Davies (violinist). 9.29: By request—repeat performance of the song cycle "Dorothy's Wedding Day" (Lane Wilson). Soloists: Miss Helena Stewart (soprano), Mr. Lance Jeffrey (tenor), Miss Amy Ostinga (contralto), Mr. Peter Sutherland (basso). 9.55: Resume of following day's programme; Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 10.0: G.P.O. clock and chimes. 10.1: Mr. Lloyd Davies. 10.8: Miss C. L. Robertson. 10.15: G.P.O. clock and chimes; National Anthem.

3LO CRITICISED

COMMUNITY SINGING AND JAZZ.

Station 3LO, Melbourne, has been hauled over the coals for broadcasting community singing and too much jazz, by an Australian listener, as follows:—

Community singing has, long ago, been "weighed in the balance and found wanting," simply because it has no appeal for the genuine lovers of good singing, who, thank Heaven, are in the majority. The fact that the community singers at 3LO sing such things as "Old Macdougall had a Farm" and "Jingle Bells" bears me out in this, for no person claiming to be the least bit musical would be bothered with such trash.

Station 3LO devotes one-eighth (1/8) of its entire weekly broadcasting time to jazz, and it is doubtful, therefore, whether the management of that station could lay claim to good judgment, what constitutes "cheap tack."



GUILDFORD TERRACE CONVENT CHOIR.

The beautiful singing of these children has been a feature of the children's sessions from 2YA.

POOR RECEPTION

Many New Zealand listeners are inclined to condemn their receiving sets because they do not obtain such good results as other listeners who have less elaborate outfits. It is now accepted by radio engineers that certain localities give exceptionally fine results and other areas, even adjacent, are particularly poor for reception. All this is mystifying to expert as well as lay minds, but the facts are well established, and more powerful sets are necessary in certain localities.

In and around the cities the trouble in connection with poor reception of distant stations is most pronounced. The screening effects of tall buildings of ferro-concrete structure is most severe in the cities. An Australian writer says:—"These structures can absorb so much of the energy that an absolutely dead spot is created in some sections, and it is no wonder that we cannot receive stations in certain directions. The wonder is that he can receive anything at all."

In the suburban sections this condition can also exist, even though there are no bridges or tall buildings. The influencing factor there is often due to ore deposits under ground. Loop sets are sometimes difficult to get operating, especially with a stucco house. This is because the stucco in most cases is laid on a wire mesh, which acts as a complete shield for the incoming radio waves, very little energy reaching the loop. Therefore, we should not blame or condemn a set as being a poor one until we have given it a chance to work. The solution for this trouble on loop sets is to place the set near a window or on a porch where the loop has a chance to pick up some energy. The same applies to loop sets in steel frame apartment houses or locations surrounded by such.

"The season of the year is the third factor. Radio reception is always better in autumn and winter than in summer. While the range of a set in winter might be eight hundred miles, the range in summer will fall off to three hundred miles or less. This is not true of all sets or locations, as it is possible to get very fine results in summer. Conditions are variable and must be taken as they come."

The recent wretched reception of the Australian stations by New Zealand listeners is a good example of seasonal effects. These are inevitable, but, it can be said from experience, these intervals of bad reception are not lasting, and are just as often followed by periods of splendid reception exceeding even winter reception.

THURSDAY, DECEMBER 29.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus; An hour's programme presented by Home Recreations Limited. 8.3: The Salomona Dance Orchestra. 8.13: Miss Phyllis Atkinson (soprano). 8.17: The Salomona Dance Orchestra. 8.27: Mr. Robert Turner (elocutionist). 8.34: The Salomona Dance Orchestra. 8.44: Mr. Phil Mountain (light comedian). 8.51: The Salomona Dance Orchestra. 9.0: G.P.O. clock and chimes. 9.1: Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 9.6: The Marickville Salvation Army Band (Bandmaster, Mr. N. H. Knight), broadcast from Wemyss Street, Marickville. 9.26: Miss Phyllis Atkinson. 9.33: Mr. Robert Turner. 9.40: The Marickville Salvation Army Band. 10.0: G.P.O. clock and chimes. 10.1: Miss Phyllis Atkinson. 10.5: Mr. Phil Mountain. 10.12: Announcements. 10.15: Cyril Kaye and the Wentworth Cafe Orchestra, broadcast from the ballroom of the Wentworth. During interval between dances "Sun" news will be broadcast. 11.30: G.P.O. clock and chimes; National Anthem.

FRIDAY, DECEMBER 30.

8 p.m.: G.P.O. clock and chimes; Broadcasters' Topical chorus. 8.3: Broadcasters' light orchestra under the direction of Mr. J. Knight Barnett. 8.13: Miss Grace Saville (contralto). 8.20: Mr. J. M. Post (oboe solos). 8.27: Mr. Norman Wright (tenor). 8.34: Miss Dulcie Blair (violin solos). 8.41: Mr. Bert Gilbert (comedienne), assisted by Miss Ivy Ray, presents a further adventure of Mr. Hopperoff. 8.56: Resume of following day's programme. 9.0: G.P.O. clock and chimes. 9.1: Broadcasters' light orchestra. 9.11: Miss Grace Saville. 9.18: Mr. J. M. Post. 9.25: Broadcasters' light orchestra. 9.35: Mr. Norman Wright. 9.42: Miss Dulcie Blair. 9.49: Broadcasters' light orchestra. 9.59: Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 10.0: G.P.O. clock and chimes. 10.1: The sporting editor of the "Sun" will talk on the prospects of Saturday's racing. 10.16: Romano's Dance Orchestra, under the direction of Mr. Merv. Lyons, broadcast from Romano's. 11.30: G.P.O. clock and chimes. National Anthem.

9.58: Mr. Herman Tremayne. 10.5: Miss Mary Neal. 10.12: National Anthem.

MONDAY, JANUARY 2.

A baw Scotch night—8.0: G.P.O. clock and chimes; Broadcasters' topical chorus; An hour's programme presented by Lindeman's wines. 8.3: The Newtown Band, broadcast from Industrial Hall, Newtown. 8.3: Miss Heather Kinnaird (contralto). 8.30: Mr. Douglas Graham (Scottish comedian). 8.37: Mr. R. Aedler Scott (tenor). 8.44: Talk on vines. 8.49: Miss Elsie Findlay (soprano). 8.56: Mr. Douglas Graham. 9.0: G.P.O. clock and chimes. 9.1: Bagpipes selection. 9.8: Mr. Frank Ryan (Scotch stories). 9.15: The Newtown Band. 9.35: Miss Heather Kinnaird. 9.42: Mr. Douglas Graham. 9.46: Mr. R. Aedler Scott. 9.53: Miss Elsie Findlay. 10.0: G.P.O. clock and chimes. 10.1: Mr. Frank Ryan. 10.8: Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist; resume of following day's programme. 10.12: Romano's Dance Orchestra, under the direction of Mr. Merv. Lyons, broadcast from Romano's. 11.30: G.P.O. clock and chimes; National Anthem.

TUESDAY, JANUARY 3.

8 p.m.: G.P.O. clock and chimes; Broadcasters' topical chorus. 8.3: Broadcasters' light orchestra, under the direction of Mr. G. Knight Barnett. 8.13: Miss Maisie Barnett (contralto). 8.20: Miss Dulcie Blair (violin solos). 8.27: Mr. Stoffel Bezuidenhout (baritone). 8.34: Miss Edna Fenner (elocutionist). 8.41: Mr. Haagen Holenbergh (piano solos). 8.51: Miss Ella Goodman (soprano). 8.58: Weather report and forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist. 8.59: Broadcasters' light orchestra. 9.9: Miss Dulcie Blair. 9.16: Mr. Stoffel Bezuidenhout. 9.23: Mr. Haagen Holenbergh (piano solos). 9.33: Miss Maisie Barnett. 9.40: Broadcasters' light orchestra. 9.50: Miss Ella Goodman. 9.57: Resume of following day's programme. 10.0: G.P.O. clock and chimes. 10.1: Miss Edna Fenner. 10.8: Broadcasters' light orchestra. 10.15: Cyril Kaye and the Wentworth Cafe Orchestra, broadcast from the ballroom of the Wentworth. 11.30: G.P.O. clock and chimes; National Anthem.

Programme Features Continued

(Continued from Page 7.)

WILLIAM RENSCHAW QUARTETTE CHANGE IN PERSONNEL.

In announcing their first programme for 1928, the Renshaw Quartet have also to announce a change in the personnel.

For business reasons, Mr. Thomas C. Wood, the baritone, has to leave Wellington, to go and reside in Wanganui. He is being replaced by Mr. Davies.

In Mr. Wilbur Davies we have a baritone little known in New Zealand as yet. However, possessed of a rich voice of exceptional range and fullness of quality, listeners-in may expect equally fine solo work as is always rendered by members of the Renshaw combination of artists. The poetic instincts of his race, he is of Welsh descent, stand him in good stead, for his songs are always full of fire and understanding, while the sweetness of his modulated tones will be invaluable in concerted work.

In their programme for January 2, Mrs. Dunn is to sing that most beautiful of Tosti's works: "Good-bye," while Mr. Davies will open with "Harlequin."

Miss Nora Greene will, on this occasion, charm you with three old English folk songs, arranged by Walford Davies, the best known of which is probably "Drink to Me Only."

On January 8 three melodious quartets are scheduled for this programme—"O Gladsome Light," from "The Golden Legend"; "How Lovely are the Messengers," from "St. Paul"; and "Ere the Silvery Lamps are Lighted."

LYRIC QUARTET.

On Thursday, January 5, the ever-popular Lyric Quartet will be heard in another of those bright programmes which have been delighting all listeners for the past few months.

The solo numbers have been selected to appeal to all listeners because of their variety. Harry Phipps's singing of "Sweet Early Violets" will be a treat to listen to, while Mr. Goudie in the singing of "The Little Irish Girl" is certain to make many feel they are back in dear old Ireland. The rich bass voice of Mr. W. Binet Brown is eminently suited to the singing of the rumber "King Love," and Mr. Ho ve should round off a programme of very high quality.

Miss Gwen Shepherd and her concert party are giving another delightful drawing-room evening on January 6.

Two outstanding artistes, Misses Maide Hooker and Berta Carr, are scheduled for January 5. Miss Hooker was a student of the Mathay School of Music (London). She will play Brahms's "Rhapsody," contrasting this number with two modern numbers by John Ireland, "Island Spell" and "Ragamuffin," the latter probably being the most popular piece that Ireland has written. Miss Carr includes in her items "Negro Spiritual" and "Deep River." As these two artistes reside in Auckland, this will be one of the few occasions on which they will be heard from 2YA.

THE CELESTE QUARTET.

The next concert by the Celeste Quartet is announced for January 7, and a glance at the programme to be presented by this party of talented singers will satisfy even the most critical that a further evening of musical excellence is imminent.

The concerted numbers to be presented comprise "Carry Me Back to Old Virginia," an appealing melody arranged for soprano solo and quartet, and "Down in the Cane Brake," a spirited number for tenor solo and quartet.

"MELODIE FOUR."

On Saturday, January 14, 1928, the popular "Melodie Four" male quartet will be again heard from the studio of 2YA. A perfect blend of four well-produced voices, coupled with artistic interpretation and original touches, places this combination in the front rank of male quartets. In addition to the concerted work, the solo items of the four members reach a very high standard.

The members of the quartet—Messrs. C. A. Williams, F. Bryant, R. S. Allwright, and W. W. Marshall—will each contribute solos.

Mr. S. Hayden, pianist, will assist the quartet in its accompanied numbers.

4YA NOTES

The children's song service on Sunday night will commence as usual at 5.45 p.m. Big Brother Bill will conduct the service, and hymns will be sung by Anglican chorists from the Cathedral.

The service to be broadcast on Sunday evening is from St. Paul's Cathedral (Auckland) when the preacher will be Archbishop Curzon Siggers. On account of the holidays, as in the case of every city church, the choir will not be in attendance.

At the conclusion of the service owing to the postponement of the St. Kilda Band's Concert, a sacred oratorio recital from the studio will be broadcast.

On Tuesday night, 8 p.m., Big Brother Bill will conduct the Children's Session, there will be some most interesting items by little brothers and sisters, and Big Brother Bill will have some gorgeous stories. There will also be the letter basket and birthdays, not forgetting THE HAPPY DITTY which follows the Town Hall Chimes at 6 o'clock.

The evening concert, commencing at 8 p.m., will contain plenty of bright items of the first order, and more serious numbers presented by Dunedin's leading singers.

The major portion of the programme will comprise popular numbers by the Dunedin Banjo Trio, many of the latest melodies will be featured, in addition to some of the lighter ones, such as "When Lights are Low," "Annabel," and "I'm Going."

Pastor W. D. More will again entertain listeners on Thursday night with one of his humorous addresses.

The musical programme will comprise several of Dunedin's leading vocalists and instrumentalists.

Miss Rita Holmes (soprano), Miss Mary Pratt (contralto), Mr. F. Tuohy (baritone), and Mr. James Ferguson (bass), will attend to the vocal numbers. Miss Mary Pratt is singing a song that is always popular, "When you and I were young, Maggie." Mr. Ferguson's contributions include two other fine Scotch numbers. Miss Alice Wilson, P.T.C.L. (pianiste), will present the "First Movement Italian Concerto," by Bach, and other pianoforte works by Liszt and Grieg.

Mr. Malcolm Robilliard (cellist) will play some examples of Kreiser-Couperon arrangements.

Friday night's concert party comprising four of Dunedin's foremost vocalists, Miss Roma Buss (soprano), Miss Mollie Andrews (mezzo-soprano), Mr. L. E. Dalley (tenor), and Mr. J. B. Macpherson (bass), will contribute the songs of the programme, which are of a high-class, several of them by the great masters.

A brilliant coterie of artists and music will be heard from 4YA on Saturday evening. The instrumentalists will be Mr. A. Watson (violinist), Mr. Chas. E. Gibbons (flautist), and Mr. George Christie (cornetist). Miss Florence Sumner (soprano), Miss Irene Hornblow (contralto), Mr. Frank Stewart (tenor), and Mr. Arthur Lungley (baritone), will be heard in the vocal numbers.

The Church Service on Sunday, the 8th, to be broadcast will be from Knox Church, which will be followed by a concert by the St. Kilda Band.

A STUDIO CONCERT AT 2YA

TALENTED STAFF OF BRISTOL PIANO CO.

On Thursday, January 12, at 8 p.m., the staff of the Bristol Piano Co., Ltd., Wellington, is giving a studio concert, to commemorate the opening of the company's new premises, which are situated nearly opposite its old site on Lambton Quay, Wellington.

The staff will be assisted by Mrs. W. J. Frew, soprano; Mrs. Jack Parker, in songs at the piano; Mr. Austin Blackie, tenor; and Mr. Eric North, elocutionist.

Mrs. W. J. Frew possesses a beautiful soprano voice, and listeners-in will be delighted with her singing.

Mrs. Jack Parker is well-known as a singer of songs at the piano. Mrs. Parker has a way with the lighter songs that appeals to all people.

Mr. Austin Blackie is one of Wellington's foremost tenors. His voice is of pure lyric quality, and this is Mr. Blackie's first appearance on 2YA. His numbers will be eagerly looked forward to.

Mr. Eric North is a young Wellington elocutionist, very popular, and his items will further enhance his reputation.

The Bristol Piano Co., Ltd. has a talented staff, and Radio-land will remember what pleasure the last concert it gave from 2YA. Full details in published programme.

ANSWERS TO CORRESPONDENTS

NEW STATION LOGGED.

"C.R.McD." (Putaruru).—The only broadcast station with the call CFCF is that owned by the Canadian Marconi Co., Quebec, Canada. It operates upon a wave-length of 410.7 metres, and employs a power of 1650 watts. This reception by you is a remarkable achievement.

LICENSE FEE.

L.W. (Kaikoura).—The position is perfectly clear if the facts are as stated. The license fee chargeable on a set which is used solely for private entertainment is 30s. per annum. The fact that a lead was put through to staff quarters would not alter the position, provided, of course, that the set was not used for the entertainment of guests. Your best plan would be to get in touch with your district telegraph engineer, who will doubtless clear up matters for you.

The Children's Corner

By "ARIEL"

A MESSAGE FROM RADIOLAND

Dear Radio Children,—

What a wonderful Christmas we all had, didn't we? And what a perfectly glorious time our Uncles and Aunts gave us! I just loved the trip in the air taxi to next-door-to-the-moon, with all our good old friends to see Father Christmas in his very own home; but I couldn't help feeling sorry for poor old Humpty-Dumpty—he fell overboard so early in the proceedings and missed everything. It was such bad luck! And weren't all the toys in the workshop lovely? I wanted to take home quite a lot of them.

I am sure we will remember this and many other happy hours "on the air" for a long, long time, for this was our first Real Radio Christmas. Of course we will have many, many more, and some day children will be saying: "How dull Christmas must have been without radio!" We really are very lucky to live in this wonderful world just now!

Did you all have a scrumptious Christmas dinner, with lots of good things that were not good for you at all? I saw such a lovely party in full swing in a shop window. The Jungle Boys were having such a feast—the table was laden with all kinds of nice things to eat; and there were crackers, too, but I didn't notice anyone pulling them. Mrs. Jumbo's head was wagging well, and she looked as though she had eaten more than enough, but poor little Jacko seemed to be having a very thin time. He had slipped down in his chair, and his head was disappearing below the table, yet nobody seemed to have time to give him a hoist!

I believe our friend Spot enjoyed himself, too. There is a rumour that he had so many biscuits sent him for his Christmas stocking that he won't be able to sit up and beg for weeks, and as for his bark—well, he had so many lumps of sugar that his throat has become husky with swallowing, and his voice has died away to a whisper. But I wouldn't listen to too many tales, if I were you!

New Year is such a lovely time, I always think. Another twelve whole months ahead of us in which to grow bigger and better, and learn more, and make new discoveries; with all the silly mistakes we have made left well behind, to be quite, quite forgotten.

Greetings to all children of Radioland—many, many happy hours, and long, radiant days in 1928.

From "ARIEL."

MINCE PIES

Timothy eat a mince pie,
He eat it late at night,
And then so many mince pies more,
They filled him too tight;

And then he had a steamy bath,
And when he should have slept—
Out, out beneath the starry skies,
Quiet as a mouse he crept.

He sailed aboard a sailing ship,
To sail to far Japan,
But found the manners there so strange
He turned away and ran;

And hiding on a yard-arm,
Such hours and hours he spent,
The skipper lost his voice and died
With asking what he meant.

So just because Tim buried him,
Scown safely in a sheet,
Instead of him the fishes eat
The toes from Tim's bare feet!

And, last, not least, when rather faint,
Tim hobbled home again,
The knot of his pyjama belt
Hid given him a pain.

And that is why, as Santa Claus,
Bumped down upon his bed,
"Not pies! Not pies!" cried Timothy,
"Plain bread and milk instead."

—By Madeleine Nightingale.

Tommy's mother was giving him a talk on politeness.

"Now, Tommy, dear," she said, supposing you were to accidentally "tread upon a gentleman's foot, what would you say?"

"I would say: 'I beg your pardon.'"

"That's my own little boy," said the mother. "And if the gentleman gave you a penny for your politeness, what would you say?"

"The innocent look passed from Tommy's face as he said:

"Why, I would stand on the other foot and say, 'Beg pardon' again, of course."

—From Mary Steele, Oamaru.

NURSERY RHYMES RENEWED

OLD MOTHER HUBBARD.

Old Mother Hubbard,
She went to the cupboard
To get poor doggie a bone.
When she got there
The cupboard was bare!
Her dinner and doggie had gone!

JACK AND JILL.

Jack and Jill went up the hill
To fetch a pail of water.
When they got to the top
There wasn't a drop;
And Jill ran away,
Where to I can't say,
For Jack has never caught her.

RIDDLES.

What is it that will go up a chimney down but not down a chimney up?

Answer.—An umbrella.

What is it that few would wish to give away but none would wish to keep?

Answer.—One's bed.

What has two heads, one tail, four legs on one side and two legs on the other?

Answer.—A lady on horseback—side-saddle, of course.

GREEDY!

There were two small boys of Dunedin. Who spent all their holidays feedin'. It is small wonder that, With the consequent fat, It is "wireless" and physic they're needin'.

WILD WIRELESS.

An owl who booted all night Left the mice in a terrible fright, When she went to her bed, "That was broadcast," they said, "Which no rodent could hear with delight!"

Our Mail Bag

MORE JAZZ WANTED.

S.W.B. (Tauranga).—Just a few lines to acknowledge the improvement in the power of 2YA, Wellington. When this station first started on the air my 6-valve neotrodyne often brought in 2BL, Sydney, at a much greater volume and consistency than 2YA, but now I am pleased to say that matters have been very much reversed. I have something to say regarding the quality of the programmes which I do not want to be taken in the air of a complaint, but rather as a suggestion of the programmes that would be enjoyed by a number of the listeners with whom I am acquainted. Having three good reliable stations, I would suggest that they took turns at providing a variance to the evenings. If this was followed through and each of the stations took turns at the particular evenings, then anyone who hated jazz need not listen to jazz, but could find his choice at the other two. The Broadcasting Company states that it is not catering for the taste of the particularly classical people, but wishes to provide popular entertainments. I am sure that a fair majority of the people (the young people at any rate) enjoy a light class of music, and one or two nights a week from each station is surely not asking too much for the pleasure of the younger generation.

P.S.—We have very little banjo, kellele, steel guitar, xylophone or mouth-organ solos. These items come through particularly well.

MARKET REPORTS.

J.A.C. (Peilding).—Writing as a listener out of touch of daily papers, I think there could be much improvement in the time devoted to news and

reports. Might I suggest that shipping aid mail notices be curtailed. More British Official Wireless items with less detail. The list of personal items is growing daily and could be reduced to two or three. Meat and Dairy Board reports have too many figures, and are called too frequently when we get the report of other exporting firms as well. The New Zealand items of interest taken from the papers could be extended to advantage. As to weather reports it is most important that the forecast be given at the same time each night, say 9 o'clock. Being a listener for the past eighteen months I must congratulate the company on the standard of concert programmes it provides.

MORE SPORTING WANTED.

A.M.F. (Southland).—I am writing this on behalf of a number of southern radio enthusiasts with the hope that your assistance may remedy the complaint which I am unfolding. Until the advent of Mr. Sidey's daylight saving, or, to be correct, radio killer, we Southlanders enjoyed the nightly reports and entertainments, and more so the sporting section's news. But Sidey's extra hour has been the cause of pushing us out of touch with New Zealand stations until 9 p.m. In fact as I write it is just that hour now, and with my five-valve set I can just get 2YA, but no more.

The radio service has been a great boon, and you can well imagine our disappointment at being marooned from it during the last few weeks. With the approach of Christmas and New Year the radio set would be of great service in keeping us posted up with sporting results, especially as the postal service will be so dormant. Would it be possible for the New Zealand stations to broadcast the sporting results, say, from 9 p.m. to 9.15 p.m.? Should the vovwer section of your listeners not care to hear the winners of the Auckland Cup, Sheffield handicap, or boat race, let them shut off and have their

A TALE FOR TABITHA

On Christmas Eve, as I lay still,
The shepherd men piped on the misty hill,
And the hollies were rustling beneath my sill,
On Christmas Eve as I lay still.

On Christmas Eve came out of the night
A star to stare at me, wild and bright.
My frosty pane, my pillow white,
All silver shone in his fairy light.

And silver he spoke to me, three times three,
"Coming with spices and gold," said he,
"Over the hill tops three Kings there be,
And the Shepherds are piping Come down and See!"

So down the dark stairway, soft crept I,
And the star he crept soft down the purple sky,
Crept till he stayed him the stable night,
Where, winter night long, the red cows lie.

And, oh, when the old byre's window through
I peeped, what I saw there, guess never would you.
They were kneeling, the cows, in the straw, two by two,
"But I did—I did guess," said Tabitha Sue

"Professor, what has become of Tony Horsham? Wasn't he studying with the classes last year?"

"Ah, yes! Horsham, poor fellow! A fine student, but absent-minded in the use of chemicals—very. That discolouration on the ceiling—notice it?"

"Yes."

"That's him."

"I'm not surprised. I always thought that that boy would make his mark if he got a chance."

—By Madeleine Nightingale.

NEW STATIONS LOGG'D.

Gay C. Holmes (Masterion).—In last week's issue of the "Radio Record" "Switch" included in his notes a paragraph regarding my having logged Station KFKB. He may be interested to learn that since then I have nicked up (call letters received) Station KPVD, Venice, California, operating on a wave-length of 208.2 metres, using a power of 250 watts. Another new station being logged by me at present is 3ZC, Christchurch, operating on a wave-length of about 213 metres.

FIRST WIRELESS CHESS GAME.

W. H. E. Abbey (Aramoho).—On September 1, 1911, two vessels, the Tainui, bound for Wellington, and the Ulmaroa, for Bluff, left Hobart at the same time. A game of chess was played by wireless telegraphy, between parties on both steamers. At midnight, when I retired to my cabin on the latter boat, the game was still in progress, with the opposing players at least three hundred miles apart. Chess was "on the air" before 2YA came into existence.

Carnival By Radio

From the City Beautiful

The wonderful success of the broadcasting of events associated with Auckland's week of Carnival has given radio an additional fillip which should result in increased sales during January. Those who have not had experience of carnival broadcasts could not believe that such a diversified programme as has been given from 1YA this week, could be successfully handled. In thousands of homes throughout the length and breadth of the country radio has added an additional joy to the festive season, and has brought the holiday spirit to many of those who are unable to join in the gaieties of the Christmas to New Year period.

AUCKLAND, rightly designated the City Beautiful, has given itself over to carnival this week. With its many parks and its wealth of scenic beauty, it would be difficult to imagine any centre better fitted for the entertainment of the thousands who have flocked there this week. Auckland has been fortunate in the many endowments secured from citizens who have felt the necessity for providing open spaces for the children of the future. It is especially beautiful at this time of the year, when its thousands of wonderful gardens are bedecked with flowers. Ellerslie, the particular spot of attraction this week is always a show place for visitors, but never more so than when the Carnival programme is at its height.

SPLENDID HOLIDAY RESORT.

As a holiday resort, Auckland has always appealed to the seeker of pleasure for its beautiful beaches, and its wonderful harbour presents an appeal that is impossible to resist. The development of the coastal areas some little distance from Auckland, has been particularly due to its wonderful climate and the popularity of the district. There are so many beauty spots to appeal to the visitor, that a week is far too short in which to see them all. Among the special attractions must be listed the Auckland Zoo, second practically to none in the Southern Hemisphere. While it is true the Sydney Zoo is somewhat more extensive, the general layout and natural beauty of surroundings of the Auckland Zoo make it more spectacular. Few of Auckland's visitors this week have failed to visit the Zoo, which has now attained a Dominion-wide reputation.

Despite the fact that the City today is packed to the utmost, with hotels and boarding houses lacking sufficient accommodation for guests, there are hundreds, possibly thousands, who would be there but are prevented by innumerable ties. To these, radio—greatest wonder of this twentieth century age of wonders—has brought the Carnival. Listening in at his outback farm, the settler has been able to visualise the progress of events throughout the week. Though not actually present he has been able to join in the revelry and gaiety associated with this "week of weeks," and he has felt his isolation disappear as if by magic before the waving wand of radio.

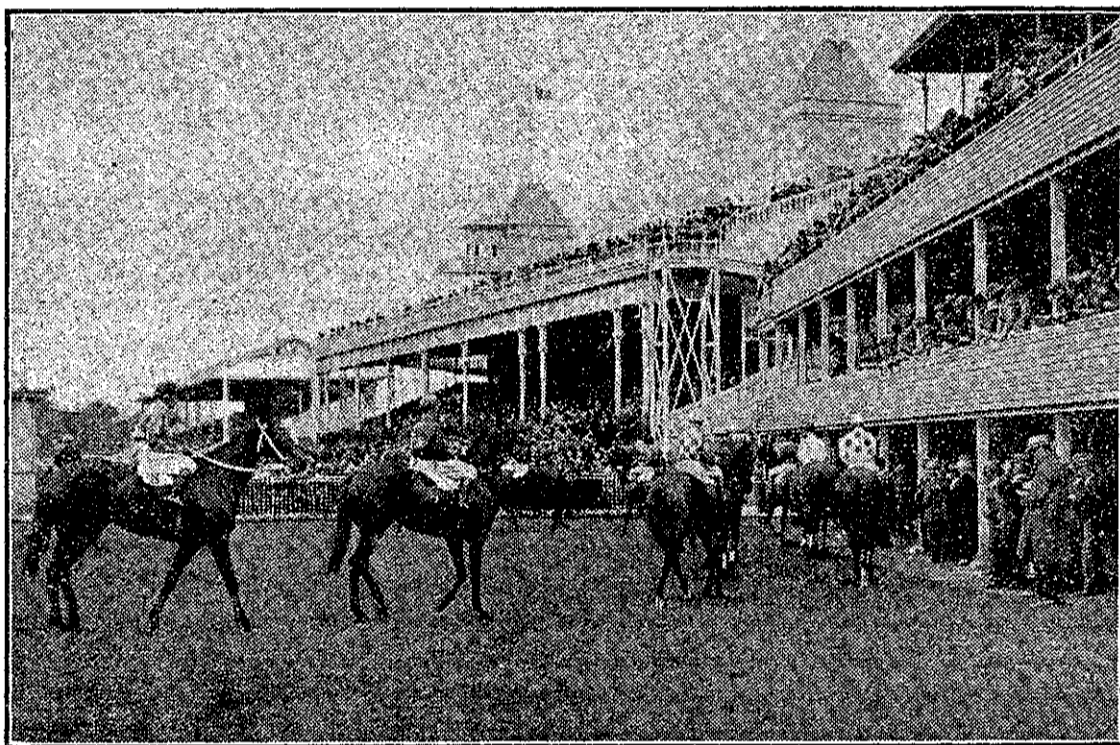
VARIED PROGRAMMES.

Station 1YA has given of its best during the week, and from the host of good things which it has broadcast, it is impossible to select that which has most appealed to its vast audience. Already, appreciative comment is being made on the service rendered, and it is apparent that the sporting broadcasts—particularly seasonable at this time of the year when all are imbued with the holiday spirit—have directly appealed to those many thou-

sands of people who are debarred from being present in Auckland to witness the races and other Carnival features.

Morning, afternoon, and evening, station 1YA has been on the air, sending forth racy descriptions of the daily programmes and giving a bright entertainment in the evening, to fittingly wind up the day. It was by a particularly happy combination of circumstances that the wealth of new talent recently engaged for 1YA, made its initial appearance during this holiday period when sets are working overtime. The evening programmes which have been broadcast during this holiday period, have been both bright and varied, and augur well for the entertainment which will now be available to listeners from this station. Elsewhere in this issue, we have referred to the outstanding advances which have been made in radio in the Dominion this year.

A SCENE AT ELLERSLIE RACECOURSE DURING THE PROGRESS OF THE MEETING.



Ellerslie itself is very beautiful and is a "show" spot to which visitors are taken. Wonderful gardens delight the eye, and the appointments leave nothing to be desired.

Could anyone, a year ago, have imagined the extension of service to include the whole of a carnival, such as is taking place in Auckland this week?

SPORTING BROADCASTS.

It is natural that sporting broadcasts do not appeal to all listeners, but the programmes this week have assuredly been sufficiently catholic to embrace something for everyone. The bright descriptions of lawn scenes at the races—while doubtless appealing but little to the average male listener—have carried thousands of country women back to the Ellerslie they knew one, two, or three years ago.

The daily outline of events given in the morning has enabled visitors to carefully arrange their daily programme, while descriptions of the state of roads, etc., are naturally of greatest assistance to all visitors who

have been fortunate enough to make the trip to Auckland in their own car.

THE RADIO DEALER.

There is another, and most important aspect of this Auckland Carnival, to which it is fitting to refer. The service rendered has naturally meant a splendid boost to radio, and dealers who have taken full advantage of the facilities available, have had a particularly busy time. Auckland dealers were to the fore in making it a "Radio Christmas" and the success of this week's broadcast should ensure them a "Radio New Year."

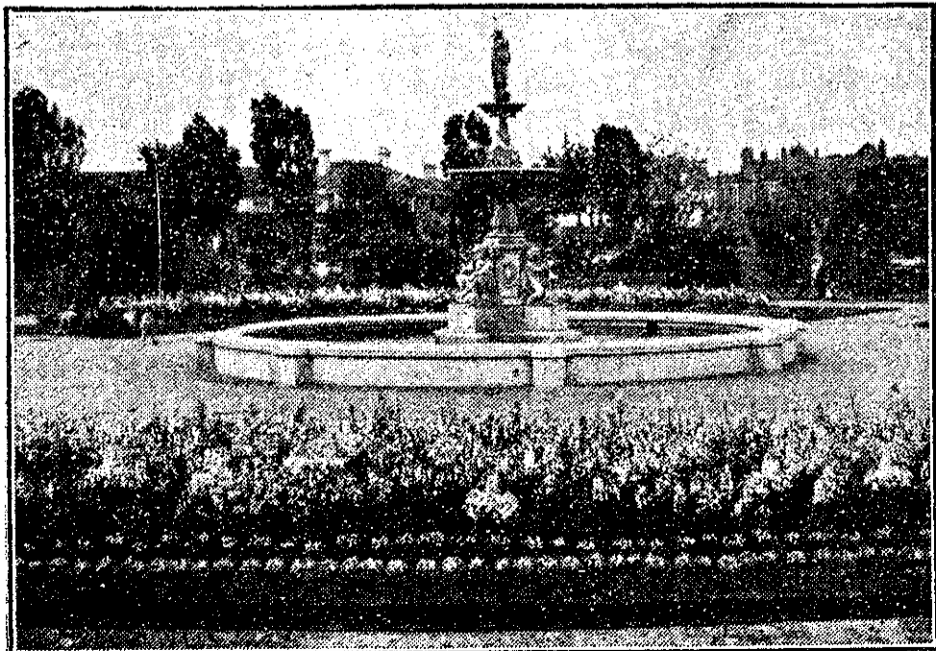
Throughout last week, 1YA was on the air from noon until 5 p.m. daily, thus being given the opportunity of demonstrating sets the whole afternoon to hundreds of would-be buyers who flocked to the shops. There are dozens of hesitant buyers who, unable to make up their minds before Christmas, will, in the face of this special Carnival service, be prospective purchasers of sets. Radio sales will not slump in the New Year, and dealers will be wise to make specially attractive displays.

"RINGING IN THE NEW"

To-morrow, New Year's Eve, will be a fitting wind-up to the Auckland Carnival and the excellent programme to be broadcast from 1YA is fully in keeping with the frolicsome spirit of the hour. Gay dance items from two special orchestras will be "put on the air," and in hundreds of homes throughout the province, this will provide the necessary music for those gay parties which invariably herald the approach of another year. Next week will see a big exodus from the City Beautiful, but Carnival memories will linger not only among those who witnessed the various events, but also with those, who, though far removed from the centre of gaiety, listened to the many features "over the air."

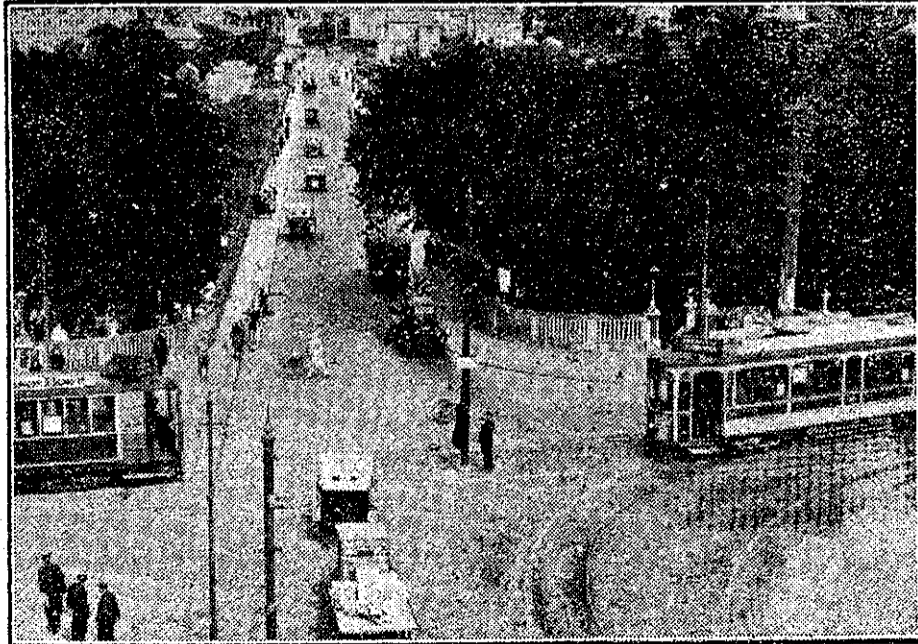
It is not perhaps out of place to refer in this survey of Auckland's gala week, to the prospects for radio during the coming year. The progress made during 1927 has been so rapid, that it is difficult to visualise step by step, the improvements which have been effected. With the actual number of listeners nearly trebled in the short space of twelve months, it is but natural that programmes should have been vastly improved during the year. This is the second comprehensive carnival service carried out by the Broadcasting Coy., the first, equally successful being given from 3YA during November. It may be confidently anticipated that it will be by no means the last of these happy events to be "put over the air." As time goes on there will be greater appreciation of the value of this type of publicity to the carnival itself, and this will allow further development. It is ridiculous to suppose that those who could be present at these events would be content with a broadcast description however perfect it might be.

ALBERT PARK, ANOTHER OF AUCKLAND'S MANY BEAUTY SPOTS.



Auckland is splendidly equipped with parks, for there are several within a stone's throw of the principal streets. Albert Park, a corner of which is pictured here, is close to Queen Street. When the flowers are in bloom its well laid out gardens are exquisite.

THE BEAUTIFUL GRAFTON BRIDGE AT AUCKLAND.



This pictures one of Auckland's busy corners. Grafton Bridge, which spans a wide and beautifully bush-clad gully, is one of the beauty spots of the city. From the bridge itself a wonderful panorama of city and harbour, is spread before the visitor.