

THE RADIO RECORD

Published Weekly

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

Price 3d.

VOL. II., No. 6

WELLINGTON, FRIDAY, AUGUST 24, 1928.

1YA Mystery Night

£50 Gramophone to be Won in Unique Contest on Aug. 29th.

ONE of the first recommendations made by the 1YA Musical and Dramatic Advisory Committee is now about to materialise. This recommendation was that a Mystery Night Programme should be broadcast from 1YA—a programme that would arouse the interest and curiosity of listeners owing to the fact that the names of the performing artists would not be announced.

A Mystery Night Programme having been mooted, the next stage was the suggestion that it should be in the nature of a competition among listeners, and that a prize should be given to the listener who was most successful in picking and naming the various artists.

SO a prize was secured, and a £50 Edison Phonograph, donated by Edison Phonographs Limited, is to be won by someone.

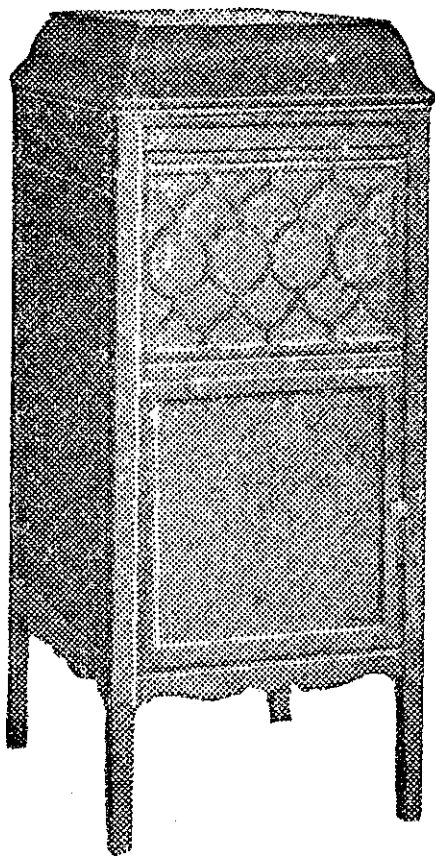
There will be other competitions of a like nature—another is to be held on September 26—but the first one for such a handsome prize is sure to arouse great interest among listeners throughout New Zealand, and especially among regular listeners to 1YA.

Wednesday next, August 29, is the date of this great 1YA Mystery Night Competition, and its handsome prize.

THE programme to be broadcast appears on page 31. It is a programme with the details incomplete, and it is the missing details that listeners are asked to fill in. The listener who does it correctly

and carries out the conditions of the competition will win the £50 phonograph.

Looking at the programme as it appears in print one cannot tell whether an item is a flute solo, a soprano solo, a baritone solo or anything else, nor who the performing artist is. It is these details that listeners wishing to win the £50 prize will fill in.



AN interesting feature of the competition is that a number of records will be used and the broadcasting of these records will be used and the broadcasting of these records will add materially to the perplexities of listeners who, in many cases will not know whether it is a record or a live artist, vocal or instrumental) they are listening to. These

records will be well-known Edison Recreations, and will be played on the Edison phonograph without any electrical pick-up.

As will be seen, the programme is a very long one, providing an excellent test of the judgment of listeners. In the event of no one being correct in every instance (and it is doubtful if any one will be) the prize will go to the nearest correct answer.

THE competition, it may be added, is being conducted under the auspices of the 1A Musical and Dramatic Committee, whose decision in awarding the prize must be accepted as final.

CONDITIONS TO BE NOTED.

1. The name of the item will be announced and listeners are invited to supply the NAME and CLASSIFICATION of the performer, such details to be written against the title of the item, under the above headings.
2. All entries must bear the Post Office date stamp of "August 30," and be posted to "Mystery Night," 1YA, Auckland.
3. All entries must be accompanied by a coupon taken from any of the Auckland city papers, the "Pictorial News," or the "Radio Record."
4. In the event of two or more persons giving correctly the same number of artists' names and classifications, the prize will be awarded to the competitor whose coupon is accompanied by the most interesting comments, not exceeding 50 words.
5. The award will be made by the 1YA Musical and Dramatic Committee, whose decision will be final.
6. Sign name and address clearly.

SEE COUPON ON PAGE 31.



New 1928

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THE NEW 1928 PHILIPS Radio Apparatus is the result of long and patient scientific research in world-famous Laboratories. Better results. Greater endurance. Simplicity in Operation, plus Economy, are its outstanding qualities.

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The Value of Tone in Radio

M

R. A. E. Elliston, of Reefton, writes very interestingly on the construction of a special horn to secure superior tone. The horn depicted, he says, was designed in conjunction

with a friend, and constructed by myself. It is made of No. 24 galvanised sheet iron, and is built in 12 segments. The length is 6ft. 3in., and the opening 3ft. 6in. wide, the small end fits in the neck of my loudspeaker, which is twenty inches long, making the overall lengths 7ft. 11in. It took three weeks to construct. The outside is painted and the inside has a coat of white lead one-eighth of an inch thick, and varnished, the diaphragm in the unit is 3in. wide.

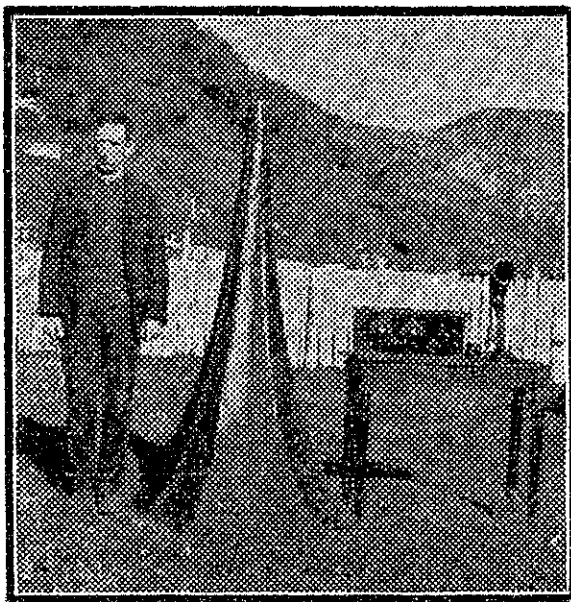
THE set I am using is a home-made three-valve duo reflex made for New Zealand conditions, using two PM5 and a UX112. Plate voltage, 120, derived from the town supply of 230 volts D.C., and reduced through a D.C. B eliminator. The circuit comprises tuned, straight, and reflexed, R.F. crystal detector, reflexed and straight audio. A tone filter is used between the set and the loudspeaker.

I use two aerials. One is 125ft. in length, of No. 16 copper, with flat top of 70ft.; the other is 512ft. long of 7-22 bare copper with flat top of 462ft. The iron pipe masts are 50ft. high, stand on glass bottles, and are insulated from stay wires.

AS there has been a good deal in magazines of late about the exponential horn and other large horn, it may interest readers to know what prompted me to make such a large horn. In the first place, I am an E flat bass player in a brass band, and have 20 years' experience in both concert and contest playing. I also played the yuba parts in an orchestra for some years, and of late years I have been a conductor. Playing in a band and orchestra calls for two different quanti-

Reefton Listener Describes Successful Home-made Horn

ties, and to a lesser extent qualities of tone. Having a good trainer, I went in for the cultivating, and a little later the study of tone. With the advent of radio I naturally turned to getting a good tone from my set and loudspeaker. The small horns did not satisfy me. To hear bands, orchestras, and choirs come out with a small, puny tone was not pleasing. So I set



about seeing what could be done with making a bigger horn, and using my band experience.

When the exponential principle came out I tried to get data, but none was procurable. In a friend's house I noticed a gramophone horn which gave a good tone, so I set about making a large horn on the same ratios, with the result you see.

TO hear this horn reproducing the tone from the Sydney Town Hall organ is a revelation—it is thrilling. Bands and choirs come out brilliant

and impressive. Cornet, clarionet, and flute solos come out rich and full. The 2YA orchestra comes out exceedingly well, the bass and cello in particular being deep and full. Symphony work and tone poems are beautiful. Soprano, contralto, and tenor solos all come out rich and full. Bass singers are splendid, and to hear Mr. Marshall sing through this big horn is immense. The chimes ring out naturally.

Care must be exercised that voices and instruments be kept in their proper proportions. A violin solo must not sound as if a big string bass was playing. Though this horn was not made on the exponential principle, it follows fairly closely when checked from measurements in the magazines. Its frequency cut-off is 80, equal to E below the bass stave. Notes can be got fairly good down to a frequency of 70.

I have had the horn in operation nearly 18 months. When I first made the horn there was a good deal of resonance due to the iron. I stopped this with a thicker coat of white lead, the result being a much greater clarity of tone. Many people, some highly qualified in music, have expressed their admiration for the beautiful clear tone given forth by the horn.

May I in all good faith draw the attention of readers who may be making big horns to a few points about them. Some may make horns out of boards from packing cases, or whatever is handy. It is best to have the material of uniform density, soft and hard wood together won't produce good results; also, holes in the horn that a pin will pass through make the tone flat and dead. Bandsmen will realise this.

"The effect of the horn is to reinforce the vibrations which enter it, due to the resonance properties of the body of air enclosed by the horn. The quantity and quality of resonance depends mainly upon the volume of the enclosed air, and somewhat upon its shape. But if the walls are rough or flexible they may absorb or rapidly dissipate the energy of vibrations of the air at certain frequencies, and thus by subtraction have an influence on tone quality. The horn of itself cannot originate any component tone, and hence cannot add anything to the composition of the sound. The horn is an air resonator, and not a sound board. . . .

A long horn seems to respond nearly as well to high tones as does a short one, while the response to low tones is much greater. . . . The flare of the horn has a great influence upon the response, heaps it up near the fundamental." The above excerpts are taken from Lecture V in the book entitled "The Science of Musical Sounds," by Dr. D. C. Miller, of the Case School of Applied Science. The musician or reader who wishes to step into the realm of science, in order to understand how his loudspeaker "goes," would do well to read the chapters "Influence of Horn and Diaphragm on Sound Waves" and "Tone Qualities of Musical Instruments" in the above-named book.

I much appreciate the "Radio Record," and in particular the "Mailbag" column. I am satisfied with the programmes. What does not appeal to me I pass by for the other man to whom it does appeal. I must make special mention of the 2YA orchestra. It is a splendid combination, and in an isolated town like this it gives the writer great pleasure these winter evenings to sit back in the armchair by the fire listening to this combination of artists rendering the works of the great masters.

All Ready for the Tasman Flight?

RADIO is again, in the near future, to demonstrate its value in the conquest of sea and air. As the time draws near for the projected flight across the Tasman Sea by Kingsford Smith and his crew in "The Southern Cross," the interest of listeners centres on the part radio is to play. Radio "beacons" in Europe and America act as lighthouses in directing the course of air-pilots, who are also able to receive radio reports as to weather conditions ahead of them. Radio may be truly termed the handmaiden of aviation.

THE projected flight across Tasman Sea promises to sweep New Zealand with unprecedented enthusiasm in broadcast listening. For the first time the four high-power broadcast stations are in all probability to be on the air

Keen Interest in Kingsford Smith's Attempt—All Stations on the Air

throughout the night. The Radio Broadcasting Company of New Zealand, with characteristic enterprise, proposes to report the flight from Australia to New Zealand from start to finish. The short-wave morse messages from the "Southern Cross" are to be picked up by the various New Zealand stations, and read out in plain English so that all listeners will be able to understand the messages without knowledge of morse. No doubt occasionally the actual transmission from the "Southern Cross" will be put on the air to enable listeners to hear how the actual morse from the airplane sounds. Through this enterprise all

listeners in New Zealand will be able to hear the progress of the great adventure from start to finish. Those who operate receiving sets capable of bringing in the Sydney stations will have much to listen to at the aerodrome from which the flight is to commence. There will be much to describe, and, possibly, Kingsford Smith and his comrades will speak an au revoir message to Australia and New Zealand. The hop-off is to commence late at night.

THE chances of the flight being successfully accomplished appear greatly in favour of the airmen. The "Southern Cross" has three engines, an enormous fuel supply, first-class radio

sending and receiving equipment, and the pilots, Captain Kingsford Smith and Flight-Lieutenant Ulm, have proved themselves, in their flight across the Pacific, masters of the air. They have lately accomplished a 2000 miles' trial jaunt from Melbourne to Perth, in a non-stop flight, about 600 miles further than their proposed flight from Sydney to New Zealand.

New Zealanders have a special interest in the projected trans-Tasman flight in view of the fact that the important duties of wireless operator for the "hop" have been entrusted to Mr. T. H. McWilliams, a New Zealander. The navigator will be Mr. Litchfield.

LISTENERS throughout New Zealand will find it worth while to have their radio broadcast receiving equipment in first-class condition for the big event. This will be the greatest broadcast happening in the radio annals of New Zealand up to that date.

Radio Round the World

THERE are now 267,178 licensed listeners in Australia.

A MAGNETIC pick up: A Scotsman retrieving a fallen threepenny bit.

AT the end of 1927 there were 2,395,174 licensed listeners in Great Britain.

THREE radio beacons have recently been placed in operation on Long Island Sound (New York).

IT is reported that a photo-telegraphy service is to be opened up between Peking and Mukden, in China.

A DIRECT radio-telegraph service is now being conducted between Kenya (South Africa) and Australia.

DURING March America exported radio apparatus valued at £171,220. Argentine was the best market with Canada next best.

THE British Postmaster-General has authorised the erection of a new high-power twin wavelength station in London to be erected by the B.B.C.

THERE are 25 broadcasting stations in Germany, which has about a

quarter of a million fewer licensed listeners than England.

AN hotel in Brisbane has the wireless "laid on" in many rooms. Guests turn on the wireless in their own rooms just as turning on the electric light.

EVEN should television rise to such heights that it has entertainment as well as scientific value, it can never replace mass entertainment presented in person by capable actors.

AFTER six years' service, the first broadcasting station in Philadelphia, has closed down. It was operated by a retail store for advertising purposes, but has long ceased to be profitable.

WITH the opening of the beam wireless service between Australia and Canada a chain of Empire beam wireless around the world has been completed. It embraces England, Canada, Australia and back to England.

AN Advisory Committee to the League of Nations has recommended the construction of a £50,000 wireless telegraphic station with an estimated cost of £10,000 annually. Its estimated traffic is valued at between £4000 and £6000.

LONG freight trains on American lines are equipped with a wireless arrangement enabling the guard in the van to communicate with the driver. These sets, it is claimed, do not interfere with neighbouring receiving stations and are not influenced by other transmitters.

A REGULAR service of radio photograph transmission is operating between London and New York. Exact copies of photos, facsimile drawings, writing, or even cheques, can be sent across the Atlantic within a few hours. The charge is £10 for a picture five inches by three.

THE leading English stations are broadcasting the great series of Bach's Church Cantata. Since Bach performed them himself two centuries ago the complete series of cantatas has never been given. Dr. Schweitzer, the leading Continental authority on this great composer, was to be at the organ for the first of the series.

"BUSH METHODS" have been applied in yet another sphere in the case of one Australian bushfeller whose tent is pitched fifty miles from Sydney. About ten feet of fence wire, tied on to two stumps, serve him as a clothes line, a runaway for his dog and as a wireless aerial for his crystal set. Insulators there are none yet, this enthusiast hears 2FC quite well on the phones.

WIRELESS impulses are hurled through space at 299,820,000 metres per second. This is roughly equivalent to 180,000 miles per second. At this speed a message could be flung round the world 7½ times in a second. The number of frequencies at which a station transmits is the number of waves emitted per second. It can

be readily seen that this divided into 299,820,000 metres, or as used in practice, 300,000,000, will give the wave-length of any station.

IN a recently published article by Victor France, an English author, the reduction of the hours of broadcasting was suggested. Rarely has any article, however controversial in its character, excited a more vigorous and intelligent correspondence. The editor of "Radio Times" has received hundreds of letters on the subject, revealing an extraordinary diversity of opinion. The author does not lack supporters—but is defeated by a heavy majority. The attitude of most listeners is that broadcasting is a service that must have at heart "the greatest good of the greatest number."

A BRITISH listener tiring of the local programmes switched on to Stuttgart, Germany, then rebroadcasting 2XAF, Schenectady (U.S.A.). After listening to the rebroadcast for a while the Englishman heard the announcer at 2XAF state that he was going to rebroadcast 2LO, London. As this double rebroadcast came through perfectly the listener sat the programme out finally, setting his watch by the striking of Big Ben in London, at the end of the programme. These signals had been connected with three broadcasting stations and had twice crossed the Atlantic and once the North Sea.

A GOOD deal of mystery surrounds the latest experiments of Senatore Marconi. It is known that his famous yacht, the "Elettra," and the experimental station at Poldhu, Cornwall, are being employed, and big developments in the system of beam communication are expected. One report says that instead of spreading out to about 45 deg., the angle of the beam is now concentrated down to about 8 deg. or 9 deg., and a system will shortly be introduced whereby the beam can be swung in any direction in which it is required to transmit. Cabled advice indicates progress along these lines.

MUCH to the dismay of the French public, their Government has decided to take over broadcasting now under private enterprise. It is feared broadcasting may sink to the level of administrative propaganda.

WHEN two condensers of equal capacity are joined in series, the resultant capacity is only half that of one of the condensers.

A GOOD earth is as important as a good aerial, especially if a crystal set is being used.

"LONDON Central 58, please." This is the latest telephone call of the business man in America. The Atlantic has been bridged by yet another service. Enormous power is necessary to fling articulate speech from telephone to telephone across that vast expanse—the Atlantic. This amplification is accomplished by twenty-three water-cooled valves, lifting the power to 150 kilowatts and amplifying the speech currents two billion times (2,000,000,000). To obtain the same result on an ordinary aerial and receiver it would be necessary to increase the power of the transmitter to well over a million (1,000,000) kilowatts. By the employment of special transmitting and receiving aerials, the latter being just over three miles in length, by the employment of directional effect and extremely sensitive receiving sets, an effective and almost secret service is established. The American transmitting station is situated near New York, while the receiving station is near Dundee (because of its height and clear atmosphere). From Rugby messages are transmitted to Houlton, Maine.

Telephone connections are responsible for the internal communication. Thus a telephone subscriber in 'Frisco desiring to communicate with a Londoner telephones through to Rocky Point (New York). Here his voice goes on the air to be received at Coupar (Dundee), where a telephone connection switches him to London. When the Englishman replies his voice is telephoned to Rugby, put on the air, received at Houlton and telephoned to 'Frisco.

A complicated switching arrangement prevents the confusion of messages spoken and heard. At the present moment the whole of the United States, Canada and Cuba are in a position to talk to any subscriber in Great Britain, France, Germany, Holland or Sweden and other countries are being encompassed rapidly.

FASHIONS change in loud-speakers much as they do in other things and it looks as if the horn type speaker will again hold sway, especially the type whose horn is modelled upon the well-known exponential lines. Unfortunately the ideal horn is much too long for convenient use in the home, and such as are beginning to be popular have the horn twisted to resemble the shell of a snail, so that it takes up much less space.

THE incorrect adjustment of grid bias ("C" battery), not only causes distortion, but is liable to lead to an unnecessary drain upon the H.T. ("B") battery.

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BEST
BATTERY**

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ADICO**

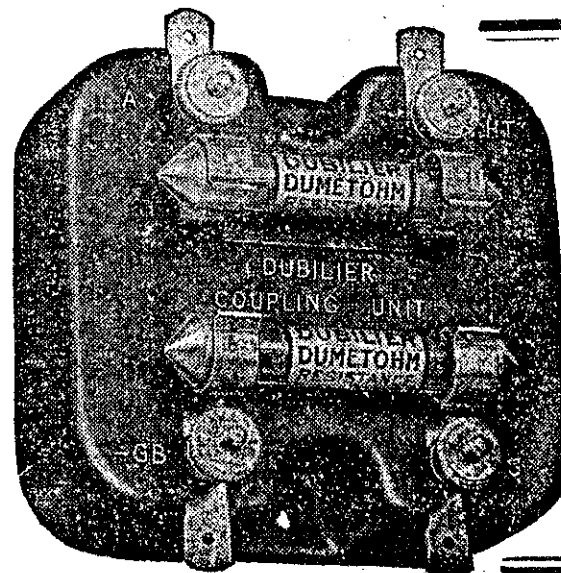
*Will Outlast
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First Prize

- 1 "MIRACO" SHIELDED 8-VALVE WIRE-LESS SET — Complete with 8 Philips "Wonder" Valves, A Battery, B Batteries, C Batteries, Aerial Wire and Insulators, and a wonderful Sonochorde Loud Speaker. **£56 10 0**

Second Prize

- 1 "VAC-TRIC" VACUUM CLEANER—Complete with accessories. **£12 10 0**
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| 3rd Prize—1 "Canadian Beauty" Waffle Iron .. | £5 10 0 |
| 4th Prize—1 "Beacon" 1000-Watt Radiator .. | 3 10 0 |
| 5th Prize—1 Amplion Loud Speaker .. | 3 10 0 |
| 6th Prize—1 Siemens Loud Speaker .. | 3 3 0 |
| 7th Prize—1 "Hecla" N.P. 4-Pint Electric Kettle .. | 2 19 6 |
| 8th Prize—5 B.T.H. Wireless Valves .. | 2 15 0 |
| 9th Prize—1 "True Tone" Loud Speaker .. | 2 10 0 |
| 10th Prize—1 Pilot Drum Dial .. | 2 0 0 |
| 11th Prize—1 Tool Grinder .. | 1 15 0 |
| 12th Prize—1 Amplifier .. | 1 12 6 |
| 13th Prize—1 Adjustable Table Lamp .. | 1 3 6 |
| 14th Prize—1 Torch .. | 0 11 6 |
| Total | £100 0 0 |

Competition Rules

1 The prizes will be awarded to the persons sending in the most accurate forecast of the actual flying time (hours and minutes) taken by Kingsford Smith in his aeroplane "Southern Cross" in its trans-Tasman flight, provided it takes place before the end of October, 1928.

2. In the event of ties the value of the prizes tied for will be added, and then divided by the number of persons with the same answer. These persons will then be invited to select goods from our large and varied stocks to the value of their share of the prizes.

3. All answers must be made out on a special form obtainable at The Electric Lamp House, 27 Manners Street, Wellington.

4. One answer form will be given FREE with each 2/- worth of goods purchased from The Electric Lamp House. Therefore a person purchasing goods to the value of 10/- will receive five answer forms, and so on.

5. Any one person may make as many attempts as he desires, provided each attempt is made out on a separate answer form.

6. All answers must be made out in ink, and inserted in the special sealed box provided at The Electric Lamp House. (Country answers may be posted.)

7. Mr. F. E. Feist, A.P.A.(N.Z.), public accountant, has been appointed sole judge, and his decision will be final. No correspondence or conversations will be entered into.

8. The competition closes at 6 p.m. on the day before the "Southern Cross" leaves Australia.

9. In the event of the flight being unsuccessful, the prizes will be handed to the Wellington Public Hospital.

[Radio Fans ! Entrust your orders to us and go after some of these Prizes.]
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ELTAX BATTERIES

45 volt ..	12/9
60 volt ..	20/-
90 volt ..	29/-
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Blue Spot 21/-.
 Enamelled D.C.C., D.S.C. wires—All gauges stocked—lowest price in town.

VALVES—

Cleartron 201a, 5/6.
 201 RF., 7/-.
 101 A., 8/-.
 CT x 112, 12/6.
 CT x 199, 7/6.

If you will only give these valves a trial you will be astounded at the results.

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Full Stocks carried of Philips Mullard and Radiotron Valves, also Columbia and Burgess Batteries at standard prices, but don't forget that for each 2/- you spend you get an opportunity of obtaining some of these wonderful prizes.

NINE SPECIALS [get on to these]

- 100 feet best English Enam. Stranded Aerial Wire. Usually 5/6. **Our Price 3/6**
- Sferavox Loud Speakers. Usually 84/-. **Our Price 47/6**
- A.J.S. Loud Speakers. Usually 47/6. **Our Price 32/6**
- Single Circuit Jacks. Usually 2/-. **Our Price 1/-**
- Ray-o-Vac 45v. Batteries. Usually 20/-. **Our Price 17/6**
- Ray-o-Vac 45v. Extra heavy duty. Usually 27/-. **Our Price 24/6**
- Cleartron Valves (201a type). Usually 10/6. **Our Price 5/6**
 (You will be surprised at the results obtained with these valves.)
- Blue Spot Loud Speaker units. Usually 30/-. **Our Price 21/-**
- Nora Headphones. Usually 15/-. **Our Price 7/6**

HEADPHONES:

Mippaphones, 4000 ohms, 12/6 pair.
 Brandes, 15/- pair.
 (All makes in stock).

Philips Products:

- Philips No. 450 A Battery Charger, 85/- each.
- Philips P.C.J.J. Loud Speaker, 130/- each.
- Philips P.C.J.J. Junior Loud Speaker, 110/- each.
- Philips Baby Grand Loud Speaker, 70/- each.
- Philips 3002 B Battery Eliminator, £9/15/- each.

Obtain one of these wonderful Eliminators and receive 97 opportunities of securing some of the valuable prizes.

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- Type AF3, 27/6 each.
- Type AF4 18/6 each.
- Type AF5, 35/- each.
- Type AF4, 18/6 each.

All makes Transformers in stock.

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Dispenses with the worry of crystals and cat's-whiskers for ever, 7/6 each.

OUR TERMS ARE CASH WITH ORDER.

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No matter what your radio requirements may be, send your orders to us. We can supply you at PRICES THAT CANNOT BE BETTERED, and the opportunity of obtaining some of these prizes MUST NOT BE MISSED.

WELLINGTON

The New Zealand Radio Record

P.O. BOX, 1032, WELLINGTON.

Published Weekly. Subscription Post Free in advance, 10s. per annum;
booked 12s. 6d.

WELLINGTON, FRIDAY, AUGUST 24, 1928.

THE RACING BAN.

THE ban against broadcasting by the Trotting and Racing Conferences was discussed by Parliament last week. The Leader of the Opposition raised the subject by commenting upon the arbitrary power arrogated to themselves by these Conferences, and the penalty inflicted upon the public by reason of their actions. Other speakers endorsed the view that the reasons advanced by the Conferences in relation to limiting gambling were sheer hypocrisy. We have already commented upon this aspect of the question, and last week pointed out that the Secretary of the Racing Conference, in his correspondence had substantially abandoned the reasons advanced initially, and now raised the question of £ s. d. In the Parliamentary discussion a suggestion along the same lines was made by the Prime Minister. "Possibly," he said, "the Conference took the stand that the privilege of broadcasting the racing was worth something to the Broadcasting Company: it helped to fill their programmes at little expense, and was it not worth something? was the question the Conference would probably ask." The Prime Minister is a little astray in the facts. The broadcasting of race news does not "help to fill the Broadcasting Company's programmes at little expense." To serve the public with race news, the Broadcasting Company has invariably gone on the air specially at considerable extra expense to itself. It most decidedly is not a question of the Broadcasting Company getting a cheap means of filling its programmes. Very heavy expense has been incurred by such special transmissions. In the case of racing and trotting, for the twelve months ended June, 1928, 64 special transmissions were given, totalling 303½ hours. Practically the whole of that time was extra time beyond the ordinary programme time imposed upon the Company in the terms of its license.

SINCE the suggestion that payment is at the root of the ban has been made, it will be well to give some little consideration to that aspect of the matter. In the twelve months ended June, the Broadcasting Company gave 206 special transmissions dealing with sporting subjects, these covering racing and trotting (64), Rugby football (71), Cricket (29), Tennis (6), Boxing (9), Athletics (7), Motor Sports (1), Swimming (2), Soccer (5), and rebroadcasts of sporting events (12); the total time devoted to such transmissions being 5734¾ hours. Racing and trotting received 303½ hours of this time. In assessing the value of publicity over the air, two points require

consideration: (1) The value to the sport, and (2) the value to the medium conveying the news. Last week we published a testimonial given by the Otago Boxing Association as to their appreciation of the value of broadcast publicity. It is a fact that since boxing tournaments have been broadcast in this country there has been an outstanding revival in the sport. All sports show the same trend.

THERE is no evidence anywhere or at any time that any sport has suffered by reason of broadcasting: all have secured a marked benefit. Is it right, therefore, that the medium that confers that benefit, and gives to the public an added appreciation of the sport being broadcast, should pay for the privilege? Is it not more in keeping with the assessment of the value of broadcasting that the sport that is deriving the benefit should pay for the benefit conferred? Listeners know full well that their fees are fully taxed in maintaining and operating the four stations and leaving a margin sufficient to pay for the individual skill of the artists employed. While individual artists are entitled to remuneration, the same argument does not apply to those sports and pastimes which would be carried on whether broadcast or not. Listeners are fully aware that the sum they pay is not sufficient to leave any margin for payment to the Racing and Trotting Conferences. Those bodies derive their profit from the attendance of the public, and that attendance is calculated to be benefited by broadcasting and not hindered. Race news is worth a lot to the Press, but does the Press pay for it? On the contrary, every facility is afforded free. Broadcasting alone is penalised. Why?

Auckland Notes

(By "Listener.")

GRAMOPHONE records, judiciously selected, are splendid attributes to a radio programme. This was emphasised here on Sunday night, when Mr. R. Strong, of the Auckland Gramophone Society, provided a most interesting hour's recital following the usual church broadcast. It may have been Mr. Strong's first appearance at the microphone; the manner of his delivery suggested that it was, but he handled his subject interestingly, and provided just those correct touches which made the broadcast recordings more appreciated.

ON Saturday last was relayed from Eden Park a description of a Maori football contest. The game was an attractive one to spectators, but owing to the personnel of the two teams being not well known to listeners, it lost much of its attractiveness over the air, despite the able way in which it was detailed by Mr. Meredith.

A SIDELIGHT on the broadcasting of race meetings illustrates how useful such information may be. A racehorse owner in Auckland is not the owner of a receiving set, but he had a horse running at a meeting in Sydney on a recent Saturday, and was anxious to know immediately of its performance. He communicated with a friend, who undertook to find out the result if possible. The race was barely finished before the owner received a ring to inform him that his horse had won. Australia wisely gives facilities for the broadcasting of races.

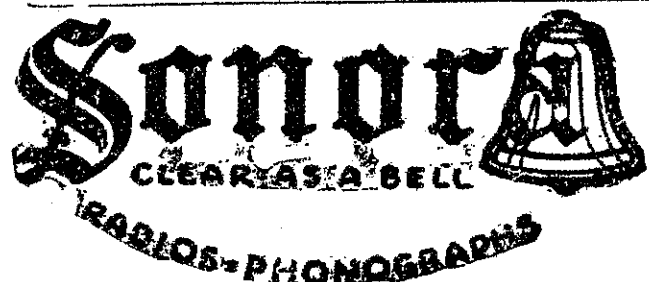
"UNCLE TOM," Mr. T. T. Garland, has a host of juvenile champions who look forward to his weekly appear-

ances at 1YA. His "party" last Wednesday was a very merry affair, delightful to the youngsters. "Uncle Tom" has a way of introducing originality into his early evening hour, and listeners are not slow to welcome it.

"WELL over three thousand miles from your coast," said the captain of the s.s. Papanui, "I picked up KFI and 1YA on my set; both at about equal strength. I changed for a while from one to the other, but found a greater appeal in the Auckland programme, and so abandoned American entertainment for a New Zealand one that was more to my taste." Many of the ships that sail the seven seas have now one or more broadcast receiving sets aboard, and the users of them become keen judges of good programmes.

THE "mystery night" promised for 1YA is the subject of much comment among local listeners, who are looking forward to the novelty of it, and the competition with which it is associated. One or two isolated newspaper correspondents (anonymous variety) have seized on the announcement to voice complaints, and offer suggestions for what they consider something better, but the generality of listeners is content to await the efforts of the local advisory committee on programmes, who are facing the tasks ahead of them with much enthusiasm.

QUITE a number both in the city and the country heard the afternoon announcements of race results from Christchurch this week, and were highly delighted that the Broadcasting Company had found means of circumventing the restrictions which had been placed upon racing news over the air. In placing these restrictions the racing and trotting conferences seem to have ignored entirely the interest which the female sex evinces in races. In hundreds, if not thousands, of homes here they tune in during the afternoon to hear descriptions from Ellerslie, Alexandra Park, Trentham, and other places. Their interest is a sporting, but not a gambling one, and the imposed restrictions are killing it.



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

Public Resents Racing Ban

Strong Approval for Broadcasting Company in Giving Results

IT has been very gratifying to the Broadcasting Company to receive from listeners scattered through the whole length of New Zealand such hearty expressions of approval and appreciation as have been tendered in regard to the action taken over the racing ban. The company has been everywhere commended for the stand which it has taken, and what is especially pleasing is the fact that the service given by the company, although restricted, has been highly praised.

In deference to the wishes of the racing authorities, no descriptions of the running of the races were given last week as the races proceeded. The broadcasters confined themselves to the strictly news or information side of the sport. The broadcasts therefore lacked the "entertainment" aspect which pleases and interests non-racing listeners.

A RETROSPECT of the week's racing and its relation to broadcasting would suggest that the ban imposed by the racing authorities has served little purpose other than to exercise a reflex action on racing. Racing does not now get the benefit of entertaining publicity in circles which are not interested in the sport, and these circles are more convinced than ever that there must be something seriously wrong with racing when the racing authorities themselves think that it would be better for racing if as little as possible were said about it. Of course, it is a wrong view for people to take, but it is the view that people who are already not favourably disposed must inevitably take. Suspicions are naturally aroused when publicity is not courted.

When is "News" "News"?

DURING the week preceding the races a lively controversy was carried on between the Broadcasting Company and the Christchurch "Press," which is the journalistic mouthpiece of the racing authorities.

The editor said the Broadcasting Company should not broadcast the results of races against the wishes of the racing authorities. The company retorted that the "Press" published news without asking the consent of the parties concerned. "News is news, and nobody's permission need be asked to publish it," thundered the "Press." To which the company replied that the result of a horse race was "news." The "Press" agreed, and then argued that the company had no more right to broadcast a description of the running of a horse race than it had to broadcast the performance of the opera "Carmen" from a theatre. What would be "news" about "Carmen" would be an account of how the opera was performed, the "Press" said. This was exactly what the company wanted the "Press" to say, and it quickly explained that while the music of "Carmen" could be put on the air, it was not yet possible to run a horse race on a radio carrier wave, and that if a description of Carmen was "news" so was the description of a horse race. In this manner the "Press," though the apologist for the Racing and Trotting Conferences, completely justified the Broadcasting Company for deciding to broadcast the results of races, for "news is news, and nobody's permission need be asked for publishing it."

FINALLY, it need hardly be mentioned that if the racing authorities had imposed a ban on the printing of race results, the "Press" and every other paper in New Zealand would have secured the results and published them, just as the Broadcasting Company has done.

HOSPITAL PATIENTS RESENT RACING BAN

AMONG the correspondence received by the Broadcasting Company last week is one letter that is worthy of special mention. It is signed by 43 of the patients of the Pleasant Valley Sanatorium, Palmerston South. The letter is as follows:—

"The undersigned patients of the above institution wish to thank you for your broadcast, despite handicaps, of the Canterbury Jockey and Trotting Club's races.

"It was with deep regret we heard that the broadcasts were to cease, as perhaps the only pastime of the less able patients has been to endeavour to forecast the races and build castles in the air when our favourites came first.

"Although our comparative seclusion from racing tracks, and our enforced idleness, deprive us of the excitement of 'punting,' there is no more interested an audience in the Dominion than there is in this sanatorium when the racing results come through.

"We all wish to tender our deep acknowledgment for the manner in which the Broadcasting Company is fighting for the sake of those listeners-in who are incapable of fighting for themselves.

"Good luck and more power to your elbow."

TOO MUCH RACING

I HAD to smile this week when I read the report of the discussion by the Auckland Chamber of Commerce on the superfluity of race meetings. It is a very neat example, is it not, of the Race Conference being "hoist with its own petard." The race people, making the thin excuse that they were concerned with the morals of the people, told the world that it was a waste of time to listen to a broadcast description of a race meeting: it was a "frightful" waste of time indeed, and kept people off their work and worried the business men horribly. Therefore, stop the broadcasting! But, lo and behold! these Auckland business men can see a little further than that. "Right," they said, "since you say so, it must be a waste of time. But why stop at broadcasting? Why not stop some of the races and so save more time? Save not only our time from listening, but yours from bothering to go out to the track and train the horses and race the horses. Stop some of the meetings altogether! There are too many of them!" So the Auckland Chamber of Commerce, thanks to the good lead of the Race Conference itself, says there are too many race meetings and we ought to save time by stopping some of them. It did "make me to laugh" to see that. It's logical, any-

way. If the race people are wise, they'll withdraw their ban before they make themselves any more ridiculous than they are, and give some more reasons to the business men for "saving time."—"Funny Old Sport."

Strong Feeling Against Racing Ban.

CONGRATULATIONS to 3YA on the result of the broadcast of the results of the races here during National Week. But how feeble they seemed after the vivid descriptions we have had in the past. We all know who is responsible for this, and I know there is a great deal of feeling in Christchurch about the ban. What I cannot understand, Sir, is why did not 3YA broadcast a running description of the races? They are acting against the wishes of the Conferences in giving the results during the afternoon at all, so why not go the whole hog? The Broadcasting Company have behind them the whole force of public opinion, and that is what counts in an argument of this kind. Good luck to the Broadcasting Company, and may we hear running descriptions of the races in Carnival Week.—A.C.

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Parliament Discusses Racing Ban

Rights of Public being Ignored

DISCUSSION occurred in Parliament last week on the action of the Racing and Trotting Conferences in banning the broadcast of race news. This action was strongly condemned by some speakers, and the reason advanced that broadcasting promoted gambling was characterised as sheer hypocrisy. It was made plain that any change in the situation would arise only from the weight of public opinion making itself felt.

MR. H. E. HOLLAND, Leader of the Opposition, asked whether the Post and Telegraph Department had taken any action regarding the attitude adopted by the Racing Conference concerning the broadcasting of race meeting results. The Racing Conference, he said, seemed to have taken upon itself the power which belonged to Parliament on one hand, and the Court on the other. The Radio Broadcasting Company had announced that it was going to continue broadcasting irrespective of any action on the part of the Racing Conference. The company was receiving assistance from the Post Office, and the questions in dispute really came within the scope of the Department to a certain extent. It would be interesting to know what attitude the Department proposed to adopt in the matter. "When the Tunney-Heeney fight was on," added Mr. Holland, "members of the House were able to follow the bout as it proceeded, and I can't see the difference between listening-in to a pugilistic encounter and listening-in to a horse race. The Racing Conference contend that the broadcasting of race meetings will lead to an increase in gambling, but it is hard to imagine how that could possibly happen under existing conditions; and, in any case, if a veto is to be operated, surely it ought to be operated by Parliament, and not by the Racing Conference."

"Sheer Hypocrisy."

"I am in accord with those who resent the attitude of the Racing Conference on this question," said Mr. R. W. Smith (Waimarino). "The claim that the broadcasting of the events will increase gambling is sheer hypocrisy. . . Already too many restrictions are being placed on the liberty of the subject. The Racing Conference proposal is a breach of faith with the general public. I feel that in the interests of those who have been induced to purchase wireless sets, par-

ticularly those in the country districts, the action of the Racing Conference should be taken in hand by the Government, and that the proposed restrictions should not be allowed to be enforced."

Prime Minister's Views.

"The question as to whether this or that should be broadcast is a domestic matter between the company and the Racing Conference," said the Prime Minister. "It is for themselves to arrange what should be broadcast, and, so long as the information sent out does not contravene public policy, there is no reason why it should not be broadcast. The Racing Conference is responsible for the government of racing in New Zealand, and rightly so. We are not discussing racing to-day, but I say that racing is far safer and better controlled under the present system than if it were governed by Parliament. (Hear, hear.) On the general question of public policy, Parliament, of course, must come in." (Hear, hear.)

The Prime Minister said that the racing clubs and also the broadcasting company had their interests to serve, and there was no doubt there were two sides to the present dispute. He was not in possession of all the points at issue, but it was possible that the Racing Conference had taken the stand that the privilege of broadcasting the racing was worth something to the broadcasting company. It helped to fill their programmes at little expense, and was it not worth something? was the question the conference would probably ask.

Mr. J. Horn (Wakatipu): That is the point.

The Prime Minister: If it is worth something to the broadcasting company, the Racing Conference would consider the question of supply and demand. I may be completely off the mark, and I only say that in a general way.

Mr. V. H. Potter (Roskill): And the poor, old public suffer between the two.

The Prime Minister emphasised that the Government could only intervene if there was a general demand for the broadcasting of such information. He did not think that that general demand existed.

INTERRUPTION BY GALE

THE gale of Thursday, August 16, caused an interruption in 2YA's transmission. The power-line was carried away and the station was off the air until after 4 o'clock.

HOSPITAL RADIO

WELLINGTON'S INSTALLATION

AT a recent meeting of the Hospital Radio Fund Committee, set up by the Amateur Radio Society of Wellington, most satisfactory reports were received concerning the success of the broadcast receiving installation at the Wellington Hospital. Mr. W. Stuart Wilson (chairman) presided, and there were present Messrs. W. J. Roche, T. Megann, L. V. Kay (honorary treasurer), and I. M. Levy (honorary secretary).

Mr. Preston B. Billing, technical lecturer to the Wellington Radio Society, who was engaged by the Hospital Radio Fund Committee to test and inspect the hospital broadcast receiving installation, forwarded a report stating that he had tested and examined the installation, and that he had no hesitation in passing it. He gave the contractors credit for the success of their work.

Mr. C. W. Bland, hospital electrician, wrote stating that the installation had been operating perfectly since the contractors had completed their work. Mr. Bland added: "I take this opportunity to thank the staff of the National Electrical and Engineering Company for the courtesy and consideration shown to the patients and hospital staff while employed on this installation."

The honorary secretary of the fund (Mr. Levy) received the following letter from the secretary of the Wellington Hospital Board: "I have to convey to you, to Mr. Stuart Wilson (chairman), and the other members of your committee, the thanks of my board for the time and trouble you have taken in connection with our wireless installation. Should an appeal be made by my board for the necessary funds required to complete the installation in both the old and new wards, to the patients in our wards."

The chairman of the fund committee, Mr. Stuart Wilson, commented upon the fact that the efficiency of the hospital broadcast receiving installation had been confirmed by all parties concerned. The reports, he said, would be particularly gratifying to the hundreds of people who had so kindly contributed towards the fund.

A letter was received from the National Electrical and Engineering Co., Ltd., contractors for the radio installation at the hospital, formally reporting the completion of the work.

The chairman paid a tribute to the contractors' technical staff, headed by Mr. Wyles.

A motion was passed expressing appreciation of the work accomplished by the National Electrical and Engineering Co., Mr. D. G. Wyles and his staff. A resolution was also adopted thanking Messrs. Thomas Ballinger and Co., Ltd., for the wiring of the new building in preparation for the future extension of the broadcast listening installation to the new wards, and to Mr. P. B. Billing, for his technical advice to the committee.

AT present all patients who are in the eye ward, wards 7 and annexe, 6, 4, and 5, are able to enjoy broadcast listening by headphones; the children's hospital, the nurses' home, and the medical superintendent's home are equipped with loudspeakers. The

Sporting

Saturday, August 25.—Auckland v. N.S.W. (Rugby), 1YA; Canterbury v. Otago (Rugby), 4YA; third League Test, 3YA; Club Rugby, 2YA.

Saturday, September 1. Auckland v. North Auckland, 1YA; Wellington v. Taranaki, 2YA; Club Rugby, 3YA; Payne Trophy, 4YA.

POLITICS ON THE AIR

PARLIAMENT spent some little time last week discussing a proposal that each of the political parties in the coming election should have the opportunity of stating its platform to the electors over the air. Under the rules now obtaining the broadcasting of matter of a political character is not allowed. The same practice obtained for a long time in Britain, but something less than a year ago it was announced that discretionary power was to be given to the Broadcasting Corporation to broadcast controversial matter. Since then various political addresses have been given over the air. It is now announced in the "Radio Times" that these political broadcasts are to be abandoned, without reasons given. This experience probably has its lesson for New Zealand.

HEENEY-TUNNEY FIGHT

FAILURE IN AUSTRALIA.

A WRITER in the Melbourne "Listener In" writes:

"The hopes of picking up the description of the Tunney-Heeney fight that was broadcast from the ringside by the General Electric Company on the short-wave band and rebroadcasting it were doomed to failure. Short-wave enthusiasts, professional and amateur, were on the qui vive, but I have not heard of any good consecutive reception, and certainly none that was worth rebroadcasting."

The foregoing illustrates the definite success achieved by 2YA and other New Zealand stations.

Our Sunday's Programme.

I feel it is my place to answer Mr. Trewin Cambridge's letter to his complaint to the concert put on the air from His Majesty's Theatre. This hour of entertainment is not out of the ordinary for anybody to listen and enjoy, especially the fine programme put on by the Port Nicholson Band. Surely an hour of band music will not hurt any listener's feelings. The Broadcasting Company can't please everybody, so carry on. Cheerio.—D.X., Okato.

nurses' sick room is fitted with nine pair of headphones. To equip the remainder of the hospital another £700 is required.

Mr. Stuart Wilson is now appealing to 700 citizens to send £1 each to the secretary of the Hospital Board to raise the required £700. The following subscriptions have already been received: W. S. Wilson, I. M. Levy, C. M. Luke, W. E. Labone, W. Horribin, and W.F.P., £1 each; H. E. Taine £2.

Exide

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MEAN DEPENDABILITY.
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Hawke's Bay Notes

A Super Station

Power of 100,000 watts

NOW that the Heeney-Tunney boxing contest is relegated to past history radio reception in this part of the world has gone back to normal, but it is due for another flutter shortly when the trans-Tasman flight is on the air, and local fans are looking forward to this broadcast with almost as much interest as the boxing contests.

As far as boxing is concerned, by the way, there has been plenty to keep interest up in this direction, and nothing but pleasure is expressed at recent boxing broadcasts from Dunedin, Christchurch, Wellington and Auckland. There is no doubt that such broadcasts make a pleasant break in ordinary programmes. The last descriptions from Auckland and Christchurch were particularly enjoyable and the boxing associations are to be congratulated on allowing contests to be broadcast.

THE R.B.C. is to be complimented on the stand taken in regard to racing broadcasts, and the Racing Conference can rest assured that as far as many listeners are concerned, their action did not tend to increase their popularity.

RECEPTION locally continues good—better than for a long time—but this winter has not been a good one for radio reception in these parts. The "Yanks" have not been so prominent of late, but JO-LK, the Jap, has been heard at good strength on several occasions.

IN the last issue of the "Record," a Napier correspondent has been taken to task by a northern listener, for daring to suggest that 2YA is not a wonder station. Maybe it is for the northern listener, but for listeners in these parts it is far from being so, probably on account of the intervening ranges, and 3YA and 1YA will give it a "go" any night and beat it for clarity and tone and in many cases for volume as well.

THE H.B. Radio Society is feeling just a little bit proud at present, for its president, the Rev. F. A. Bennett, has been appointed Bishop of Aotea-Roa, New Zealand's first Maori Bishop. The Rev. Mr. Bennett is a keen radio enthusiast and his genial personality is a feature of local radio meetings. A brilliant orator and a thorough gentleman, we congratulate him on his appointment, our only regret being that it may necessitate his leaving this district and thus severing his connection with the H.B. Radio Society.

Just a word of praise to all the Uncles and Aunts who are responsible for the children's sessions at the various stations. Some of these sessions are great, and are enjoyed quite as much by the adults as the youngsters.

THE best advice which can be given is not to spill accumulator acid on the carpet, but if you do chance to be unlucky, you can minimise the damage by neutralising the acid with a weak alkaline solution such as ammonia or washing soda.

Listeners familiar with the short-wave transmission of the American station WGY, which is operated by the General Electric Co., of America, at Schenectady, New York, will be interested to learn that at WGY there has recently been installed the most powerful broadcast transmitter ever constructed. This transmitter uses a power of 100,000 watts, which is 20 times the power used by 2YA, Wellington. It is designed for operation on ordinary broadcast wave lengths, and it is understood that its normal wave length will be somewhere about 365 metres. About a year ago, experiments were begun at WGY with 50,000 watts transmitter. Although it is similar in principle to less powerful transmitters, many details of the new station are interesting. The apparatus has been made extraordinarily compact, and it occupies less floor space than the 50,000 watts transmitter it replaced.

Remarkable Valves.

THE valves used are among the most unusual components. Each is composed almost wholly of metal. The plate, which is also portion of the outer wall of the valve, is about three feet long, and three inches in diameter. Its walls are hollow, and, while in operation, the valve is kept cool by a stream of water, which, by means of pumps, is circulated rapidly through the hollow plates. The filaments used are several feet long, and as thick as fairly heavy fencing wire. Each carries 210 amperes at a pressure of about 30 volts. This is approximately 5000 times the amount of power required to operate a receiving valve of the 201a type. Many safety devices have been incorporated to protect the apparatus and its operators.

A Special Alarm.

A SPECIAL alarm is attached to the cooling system on the valves, so that, if any interruption of the flow of water occurs, or if the valves tend to overheat, the operator on duty is immediately warned. Several of the large valves are used at once in the transmitter, and as each consumes about 107 kilowatts in plate and filament circuits, the surviving valves would be heavily overloaded if one broke down. Hence, each valve is fitted with a switch, which automatically cuts off power to the transmitter if it fails. The apparatus which carries current at a very high pressure is carefully protected with screens. Access beyond these screens is gained by doors so constructed that, while they are open, and until they are locked from the outside by the operator, all current is turned off. Hence, engineers working inside the screens are adequately protected from the danger of a shock from the apparatus.

IF leads are to be brought in, try the window. Flat, flexible copper strips can be made to fit underneath the closed window and connect both aerial and earth to the set without damaging the house. Suitable strips are on the market, but they can be improvised quite readily.

OWNERS of crystal sets who desire to add a stage of audio amplification cannot do better than employ a double grid valve. These fit standard bases, the auxiliary grid being connected by means of a terminal at the side of the valve to the positive terminal of the high tension battery. These valves give an amplification factor up to a hundred with consumption as low as .06 amperes at four volts, thus permitting an accumulator to be dispensed with.

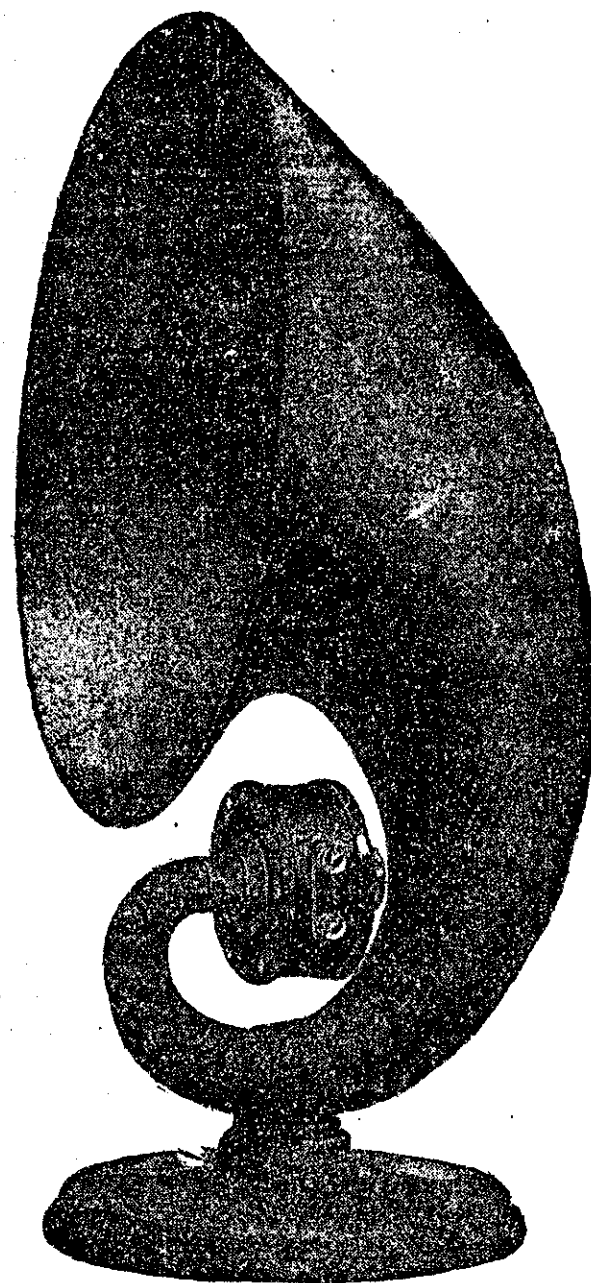
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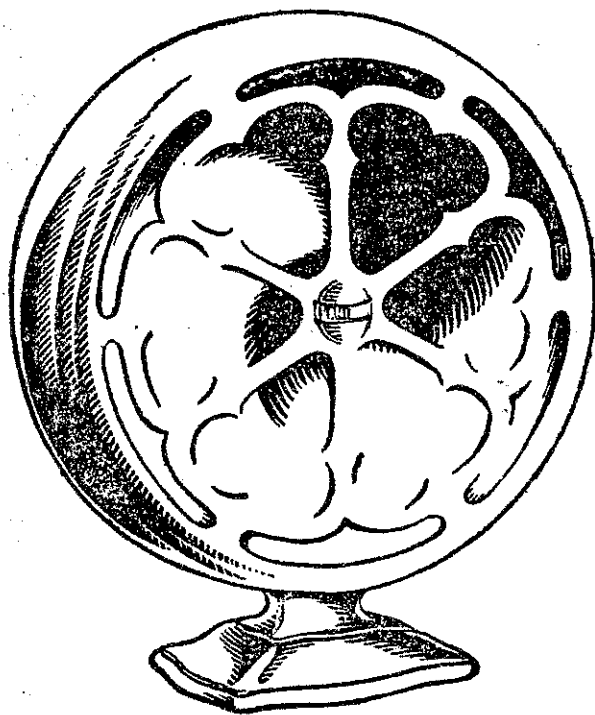
ASK ALL LEADING DEALERS FOR FERRANTI COMPONENTS

SIR JOHN RUSSELL ON THE AIR

AN unexpected treat was given listeners—particularly country listeners—by both 3YA and 2YA seizing the opportunity of Sir John Russell, Director of the Rockhamsted Experimental Station, England, being in New Zealand, and asking him to speak. On Thursday night from 3YA he spoke on the "Relationship of Science to Farming," and again on Friday night from 2YA he elaborated on this subject. The ability of Sir John to speak from 2YA was due to the storm delaying his vessel, the Rotorua, one day, and thus detaining him for a further few hours in Wellington. The opportunity was immediately seized to approach him to speak to the farming community from 2YA. His address was a particularly bright and interesting one, and emphasised the beneficial results accruing to agriculture from scientific investigation.

A VOLTMETER is almost essential to an owner of a battery set. Faulty batteries more often than any other factor within the set cause faulty reception, and a listener who is not accustomed to his set may be put to great expense to locate the trouble.

ATWATER KENT RADIO SPEAKER



MODEL "E" SPEAKER.

A new method of cone suspension, found in no other speaker, makes certain the faithful reproduction of the entire range of musical tones. In attractive colour combinations and with 9ft. of flexible cord. Hear it at your dealers.

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

Uses of Valves

READERS of the "Record" will be familiar with the fundamental principles of the valve. It will be interesting to mention a few of its many applications.

First, within the set itself, there is:

(a) Radio-frequency amplifier valves which amplify the impulses collected by the antenna.

(b) A detector valve, which changes these impulses so that they are audible if applied to earphones or to loud-speaker and if they are loud enough.

(c) Audio-frequency amplifier valves. These amplify or make louder the detected signals.

(d) Power amplifier. This is always the last valve in the circuit. It is often not included in the smaller sets. The function is to relieve the audio-frequency valves and so purify reception.

The essential of a set is a detector; after this valves are added before as radio-frequencies and after as audio-frequencies. Finally a power valve may be added.

Secondly, there are valves to rectify the alternating current of the house supply, to give a steady, direct current.

Thirdly, valves may be used as a measuring device. By a suitable connection, the valve amplifies weak currents and, knowing the amplification factor of the valve, the current can be measured. Then again by "hooking up the apparatus backwards," it can be made to measure higher voltages.

A specially-designed valve, one designed to carry more plate current than our valves, has been used to regulate the voltage of direct-current generators.

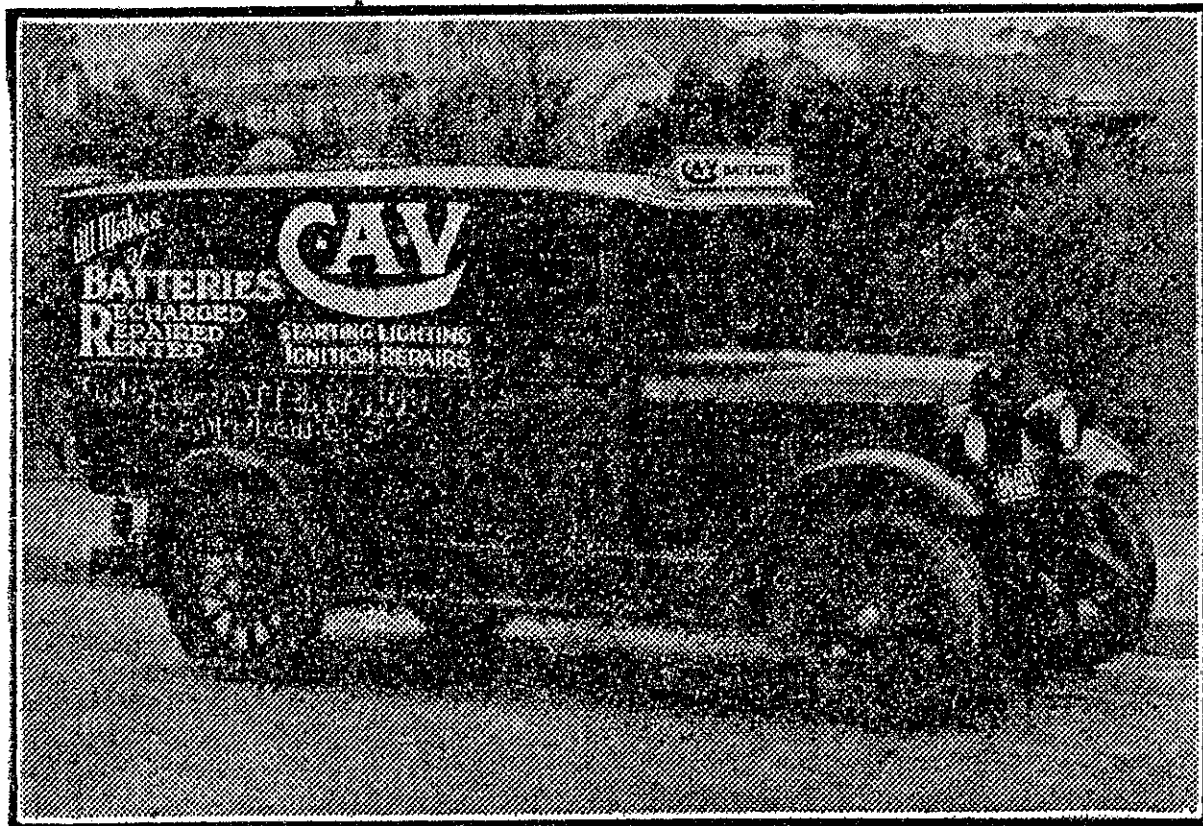
There are certain other applications of the valve which are very interesting on account of the fact that they permit measurements of extremely small distances and weights. Used as such, the name ultra-micrometer is given to these arrangements.

By a special arrangement of apparatus, it has been possible to measure a weight as small as one thirty-thousandth of an ounce, and a distance between two plates of one three-millionth of an inch.

In addition to these briefly surveyed, there are multi-grid valves, which have many applications, valves connected with photo-electric cells, e.g., neons, and oscillators, speech amplifiers, modulators, and regulators in broadcasting stations.

TRANS-TASMAN FLIGHT

"How long will the Trans-Pacific fliers be in the air?" is the question asked by the Electric Lamp House, 27 Manners Street, Wellington, and generous prizes, with a total value of £100, is offered for the correct, or nearest correct, computation. Points that have a bearing on the time are: The total distance to be flown, average rate of machine, weather conditions. It is not expected that any competitor will give the exactly correct time, and the competition is thus arranged to permit everyone having an equal chance, based on their arithmetical computation. Entry forms may be obtained from the Electric Lamp House with every 2s. purchase made, and a series of articles of use to every radio listener are offered at special post-paid prices, competitive with similar lines offered elsewhere.



Battery Service Car maintained by a progressive Wellington dealer.

CRYSTAL CONTROL AT 2YA'S POPULAR HUMORIST KFI

NEW ERA HERALDED

THE latest American mail brings news that KFI has now installed crystal control, similar to that which 2YA carried out some time previously. KFI is quite proud of its pioneering, and the occasion is referred to as follows:—

"Marking the dawn of a new era in radio broadcasting, KFI officially when on the air on Saturday night with their new Western Electric crystal-controlled double oscillator and modulator unit. Until this time this type of equipment, the product of the best brains of the Western Electric and Bell Telephone Company laboratories, has been entirely confined to experimental stations.

"The advent of the new unit marks the doom of the old style equipment," says Mr. Anthony, owner of the powerful Los Angeles station. "Before KFI installed the huge crystal control panel, its modulation was about thirty per cent. This has been increased to 80 per cent. without any additional power, which means that distant listeners who formerly heard KFI's carrier wave will now be able to bring in voice and music without difficulty. Undoubtedly, before long KFI's example will be followed by smaller stations on the Pacific Coast, and this will greatly reduce the present interference problem."

A POPULAR performer who has been making his mark at 2YA recently is Mr. G. Titchener. His humorous monologues and songs have betrayed the hand and the stagecraft of the old performer, so that it comes as no surprise to learn that Mr. Titchener has had quite an extensive and distinguished career on the legitimate stage. As a boy he became prominent as a soprano singer, and first joined the Moore and Burgess Minstrels, with whom he performed in London and throughout the provinces. Subsequently he made a tour of South Africa with the J. Griffiths Musical Comedy Company. After this, his voice having broken, he took up comedy work with Keith Prowse's concert parties. Subsequently he left for New Zealand with Maude Fane and Edgar Warwick's Company, called "The Court Cards," whose performances are remembered with affection. Later he toured Australia, Tasmania and the Far East on two occasions, returning to Australia to join Edward Branscombe's Dandies, and with them toured New Zealand again. This was in 1914, and since then he has made various tours throughout Australia. He is now settled in New Zealand, but the lure of stage work cannot be resisted, and he finds a welcome ally in the microphone, and by this means is reaching a vast audience nightly. His very extensive repertoire and breezy manner make his items very acceptable to listeners.

N.Z. RADIO LISTENERS GUIDE.

Indispensable to all listeners. Hints for operation, full lists of stations (Long and short wave), and glossary of terms. Price 2/6 at dealers, or 2/9 posted from Radio Record, P.O. Box 1032, Wellington.

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LARGEST STOCKS OF RADIO ACCESSORIES IN
SOUTH CANTERBURY.
COMPLETE INSTALLATIONS A SPECIALTY.

BREHAUT BROS.,
TIMARU AND GERALDINE.

B.B.C. Engineer Summarises Knowledge on Fading

By Capt. P. P. Eckersley, Chief Engineer, British Broadcasting Co., in "The Wireless World."



THE phenomenon of "fading" has been known to wireless engineers for some time, but the advent of broadcasting has brought the subject into great prominence.

There may be those so fortunately situated in relation to one of the broadcasting stations who have never experienced fading, so, at the risk of redundancy, I will try and explain first what I mean by the term.

You are listening to a station 150 miles away when all at once the signals go dead weak. You fly to the reaction handle, but everything you do has no effect, when suddenly without warning the sounds burst out again. The number of people who have conscientiously soldered, tightened and tuned, and scratched a bewildered head, must be legion, as the number who write in, having satisfied themselves that their end is all right, and complain of the variability of the transmissions, is certainly considerable.

As a matter of fact, the transmissions by the British Broadcasting Co. are not variable, and, except where light and shade are desirable in musical items, radiation and modulation are maintained sensibly constant.

The cause of the variability lies, therefore, between the transmitting station and the receiving station.

THE question is, then, what is there to influence the attenuation of the waves so markedly and so variably? Why in certain places does London fade while other stations do not? Why is fading only noticeable at night, and why should night time signals be stronger than day time signals in certain places, and not in other places? Why should 2LO only be audible a quarter of an hour after sunset in Salamanca, Spain, and why should the Shetlands get us pretty uniformly, while people in the Victoria district (no! London, not B.C.) experience fading effects which are never noticed, say, in Hampstead? The answer is easy as far as I am concerned, and it simply is, I don't know!

With the keen interest that is at present being taken in the problem of fading, the following explanations of observed phenomena, by a wireless engineer, who by virtue of his duties is faced with difficulties attributable to this cause, should prove of great help to the experimenter who is endeavouring to investigate the subject.

BUT a general theory exists which I will give you, and which probably forms a basis on which to build the explanations of minor variabilities.

Firstly, in spite of all we have heard about the freedom of the air, wireless waves travel through the aether, which is the postulated medium for the transmission of all electro-magnetic waves. This medium is not in any sense of the word matter, in as much as matter is ponderable and can be analysed, weighed, felt and experienced by the human senses, as it were. The aether is perfectly non-conducting to electricity, and to our senses it is nothing. But floating about in the aether are minute particles which in various permutations and combinations form matter—air, water, earth, and so on. Now, if matter is conductive to electricity, it impedes the progress of electro-magnetic waves travelling through the aether which holds matter. Thus, if the air which is suspended in the all-pervading aether is conductive, it impedes wireless waves. It may come as a surprise to many to know that air can be conductive; it is not usually necessary to suspend the filament terminals of your set in a vacuum, but air can become quite conductive, and especially does it become so under the influence of sunlight. What happens is that the little particles called molecules in the air are made lively by the sunlight and split up into electrified units, which make possible the conduction of electricity.

Thus there may be drawn a rough sketch of the world with the sun shin-

ing full on one side, leaving the other in shadow. On the sunny side there occur electrified particles. On the dark or night side these particles recombine near the earth, while many others rise up to a height and are all huddled up together to form a sort of electrified layer, some 20 or 30 miles above the earth's surface. Daylight diffuses the layer which at night time forms above the earth. The layer was first postulated by Heaviside, and is often known as the "Heaviside Layer."

Near the sunrise or sunset region the diffusion is very great, owing to the sunlight being oblique to the air, and gradually towards the night side the air is cleared of particles, while towards the light side uniform diffusion sets in.

Now see what happens between two stations A and B on the night side. Some of the waves go direct, but many of the waves from A to B hit the layer and are reflected from it. The reflected waves are added to the direct rays, and therefore, as the reflective qualities of the layer vary, so the strength of the signal at B varies. It is as though the layer were a great mirror, and that, as it turns and changes and moves uneasily in its sleep, so the signal is reflected more or less, and so fading occurs.

If this theory is true, certain things could be proved as follows experimentally:—

(1) There should be no fading in the day time, but the signal should be uniformly weaker. This is generally true.

(2) There should be evidence of rays considerably inclined to the vertical. In direction-finding work the general principle of determining in the directing of the incident waves is to use a frame, the angle of the vertical plane of which can be varied. When the frame is at right angles to the oncoming waves no signals are heard, but this can only be so if the waves are arriving horizontally; any vertical component will affect the frame equally in any position, and no minimum will be found. This actually happens because a simple frame at night gives no reliable bearings due to the presence of the vertical component.

(3) Using a frame which combines so largely the direct and the vertical ray distortion should occur with speech. This is noticeable more with a frame than with a vertical aerial.

(4) Fading should be more noticeable at great distances from the transmitter than near to.

(5) Fading should be more noticeable over land than over sea, owing to the greater attenuation of the direct ray. This has been noticed.

FURTHER than this it is impossible to go, because obviously the whole phenomenon depends so largely upon casual happenings. Undoubtedly, though many of the freak ranges are influenced by casual electrifications forming giant reflectors just in front of the sunset, the extraordinary difference between the power required to drive a signal across the sunset or sunrise band, to that required when this electrified band is removed, is evidence of the justness of the theory, and many of the problems of East and West transmissions are bound up with the same idea.

Local fading (I mentioned that people were getting fading at Victoria, London, from 2LO) is due to something quite different. Perhaps the telephone service or the electric light mains are influencing factors.

ELECTRICAL LEAKAGES

TROUBLE IN AUSTRALIA

Action taken by officers of the Commonwealth Postmaster-General's department a few days ago to overcome interference caused by an electric current leak from one of the Tramways Board's power mains directs attention to a source of wireless interference to which, so far, much too little attention has been given (says the Melbourne "Argus"). Although concrete cases of such information are seldom proved, it is generally accepted that power leaks cause a large portion of interference experienced in large cities. When they occur, listeners usually blame either the broadcasting station for poor transmission or neighbouring amateur stations for causing interference, without realising that the real source of trouble is in their own electric tramway or

lighting service, and perhaps in their own homes. It is surprising how wide the range of some interference from electrical devices extends.

IN recent experiments with super-sensitive short-wave receivers, on wavelengths of about 20 metres, it has been found almost impossible to work while motor-buses and cars are running in the neighbourhood, the electrical waves set up by the ignition equipment being sufficiently strong to operate the sensitive receiving apparatus. Such interference is seldom if ever heard on an ordinary broadcast receiver, but interference from electric fans and other apparatus using electric motors, old-fashioned electric arc lights, battery chargers of the vibrating reed type, and violet ray machines is often so severe that it prevents reception.

A COMMON cause of trouble, and one usually difficult to detect, is a faulty contact between the socket prongs and the base of an electric

lamp, or the socket contacts and ping of a radiator or electric iron. If such a fault exists an intermittent electric arc is set up at the point, and while this arc is burning it generally radiates powerful interfering waves. Proof of this can be had by turning off an electric light in the house. As the switch opens a momentary arc is caused, and a sharp click will be heard in the loud-speaker. The worst electrical interference I have ever heard occurs near the electric tram lines in Bendigo. Owing apparently to dirt on the rails, marked sparking occurs at the wheels of the trams in that city, and the resulting interference waves are so powerful that reception becomes impossible when a tram is in the neighbourhood.

WHICH is right—"cat's whisker" or a cat whisker? A bunch of beginners (college boys) dilated on this argument recently. It was put to the vote, and "cat's whisker" was carried with one dissentient, who, though in a hopeless minority, was correct.

ANTARCTIC YARNS FOR RADIO KIDDIES

Many years ago (1902) a sturdy little bark nosed its way out of the East India Docks, London, and sped its way Southward Ho! bound for Lyttelton, New Zealand. It was the "Morning," Captain R. Scott's relief ship on her way to give aid to the "Discovery," which had sailed from the same dock a year previous. On board her was Mr. A. N. Pepper, then a young midshipman. At a future date the children of New Zealand will, through 2YA, hear all about her travels and all about that vast continent, South Victoria Land its bird and animal life, and all the life of a South Polar Expedition. Mr. A. N. Pepper will give a series of "yarns" to the radio kiddies and tell them all about this wonderful dependency of New Zealand.

The Woman's Point of View By "Verity"

The Annotations of Annabel Books

Novelties for the Home

DEAREST:

The fences are down at the time of writing. Not our spiritual fences, those enjoined upon femininity by insistent pastors and masters; but the material fences set betwixt us and the man—and, more particularly, the woman—next door. Last week in Wellington's fair city it blew half a gale, and great was the toll by way of minor wreckage which, though short of tragedy, was yet infinitely devastating to a safe serenity. Treasured privacy was wrested from us, barriers of hedges were swept away; and our coming and goings raked by windows of our neighbours, who doubtless felt equally resentful, however guiltless one might be of the prying and peering sometimes allied with open-eyed proximity.

What with storms and tempest, feeling triste as we do in bidding farewell to enchanting Poletti and Flor, Rota's beguiling voice and person, Scamuzzi's dramatic force and magnificent baritone, all the musical delight of the Fuller-Gonsalez combination—which assuredly has given us of the best, altogether avoiding the "muck" prescribed by Dame Nellie Melba for her fellow countrymen, as revealed by certain up-to-the-minute memoirs—we have sought distraction, in a Poster Exhibition advertising other climes and gentler zephyrs than those at present raging round New Zealand.

IN the temporary studio of Miss Winifred Guy, bird of passage from overseas, are to be seen eminently arresting examples of modern poster work in England and the Continent. At the opening of this exhibition many well-known people were to be seen, including representatives of the Victoria League, under whose aegis the show takes place, while Sir James Allen, introducing the exhibitor in brief, illuminating sentences outlined the *raison d'être* of Miss Guy's tour of the world, and the genesis of the present beautiful and widely scoped posters.

Commercial Art is in its infancy in our Dominion, and this revelation of possible achievement must prove an incentive. Lamorna Birch, R.W.S., whose lovely lakes and islands need no introduction, finds fascinating exemplification; while Yeend King so pictures the lure of Lladudno that, wistfully viewing, an overwhelming desire to go thither is born. Illustrating that great corporation, the L.M.S., Maurice Griffenhagen employs noble design and colouring in the "Gateway to Scotland"; and also for this far-reaching organisation are

poster designs by names to conjure with in the world of art. For a British Industries "ad." (to use the vernacular of commerce) Clausen, R.A., exploits his incomparable talent in dark, symbolic visualisation of miners, curiously arresting in design and execution.

INVITING to immediate odyssey of the wide world is a blazing Cunard poster; and who could resist the gay grace of 18th Century beau and belle of Bath, who under light of crescent moon extol the delights of that salubrious resort? On behalf of the Zoo, green-clad Littlest One marvels at fish of supernatural slipperiness; while a historic English Cathedral is seen in its nobility of exterior and interior beauty; and no one would doubt Brussels as ideal holiday bourne when its loveliness is placarded by the brush of Leonard Richmond, R.O.I. Fain would I have lingered, but with ravished glance at a memorable, characteristic specimen of the daring drawing of Brangwyn, and an advertisement of Canada, all force, truth and virility, I went forth more than ever impressed with the resources of our Empire, and with a far, fine hope one day to see some aspects of the world so magnificently illustrated by present-day advertising.

TIS interesting to find, in a late booster of broadcasting and eloquent speaker at the microphone, a great Chief of the Gold Coast, who lately intrigued London, whither travelled this dark giant in order to receive his knighthood from the English King. Sir Orfon Alta is a Hercules in bronze, who on occasion dons royal crown and draperies of gleaming gold and green. It would seem he carries, if not his heart, his soul upon his silken sleeve; being attended at all functions by his materialised "soul"—an aloof-eyed, copper-skinned limpet—who may, or may not, prove an enviable spiritual asset, but meantime doubtless is to be regarded as a stepping-stone towards salvation.

IN Germany, also, the old order changes, and placid house-keeping frau emerges into open-air enthusiast, divesting herself of clothing on many beaches, together with her brood, with engaging publicity; while dull, flaxen-haired school-girls, pursuing their studies, shed unnecessary habilaments until little but shoes and stockings remain of old, respectable vestments.

Your
ANNABEL LEE.

Death Comes for the Archbishop

(By Willa Cather.)

THIS is a beautiful story, but it will only be appreciated by the literary elect, who will cherish it for its clear and charming style, its historical sense, and entire neglect of that obvious sex appeal of which we have had such plethora in recent years.

The accomplished American novelist tells the life story, a noble chronicle, of a missionary bishop in New Mexico of a century ago; describing with meticulous clarity life in that hazardous country, peopled by lawless nomad tribes, whose doctrine is violence and to whom human life is of no more consequence than the flick of a finger. Strange and terrible journeys are undertaken by the follower of a well-

DX

Have you ever wondered, my sisters, With the inquiring mind of our sex, What is meant by that curious term, Those mysterious letters DX?

Well, they mean that a trip to the movies, Fell through—and you've not been yet, For an otherwise amiable husband Is glued to a radio set?

DX stands for distance stations, For sleeping alone at night, For very big bills from the council, For burning electric light!

Some women lose their husbands By accidents, chills, or wrecks, But there are lots of radio widows Whose husbands are searching DX.
—Ella May.

nigh invisible gleam, in company with that loyal and trusty henchman, Father Vaillant; great adventures come to them, both of the flesh and the spirit, and friends of every colour and caste. The story goes its fascinating way, enriched by Miss Cather's scholarly vocabulary; and after incredible dangers overcome, thirst and loneliness and stark bereavement, at the long last the old and saintly Catholic priest goes the way of all flesh and, after a life lived on the Christ-like pattern, meets death, "delicate death," with the same serene and indomitable quality of spirit.

This minute and able conception of a rapidly vanishing type of ecclesiastic is told with rare power and insight; allied with admirable knowledge and skilful portrayal of life in a distant country and century and that rare and reticent expression we have grown to expect from Miss Cather, singularly refreshing amid the wilting welter of much fiction at present turned loose upon the public.—R.U.R.

A Self-Wringing Mop.

SOME of the newest labour-saving devices which have come to lighten the daily round of the English housewife are worthy of note.

There is a self-wringing mop for washing floors with the minimum of effort. In appearance it is like an ordinary mop except that it has square ends to fit into the corners. At the side there is a small handle, which, when turned wrings the mop. This enables the use of much hotter water and also keeps the hands clean. When needed for polishing a floor the cotton mop may be removed and replaced with a dry polisher.

A Potato Masher.

THEN there is a masher which prepares potatoes for the table in a very few seconds. This is a perforated metal cylinder with a wooden plunger, which pushes the potatoes through the holes. It is a great improvement on the ordinary methods of mashing.

An Iceless Refrigerator.

THE iceless refrigerator is a boon to housewives when ice is unprocurable. It automatically becomes cooler as the temperature of the air rises. It is water-cooled, having a container at the top, from which the water slowly penetrates to the absorbent lining of the food chamber. The hotter the day, the greater is the acceleration of the process of evaporation, ensuring a perfectly cool safe for all kinds of food.

A Milk-Boiler.

THE problem of milk boiling over is solved by the new milk containers. They are made of aluminium in the form of a jug with a covered top. This top has an outlet in the centre and also small perforations. These break the skin of the milk as it rises thus preventing all possibility of the milk boiling over.

A Thermos Jug.

THE old familiar thermos flask is being replaced by a new shape. Made like a jug to facilitate the pouring out, they are to be had in bright shades of blue, pink or green, and strike a cheery note of colour at the picnic party.

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

When your throat pricks
take
Pulmonas
RELIEF BY INHALATION
FOR COUGHS AND COLDS



The Woman's Point of View

Fripperies

Painted Toilet Sets.

PAINTED wood toilet sets are one of fashion's latest whims, and make ideal wedding presents. A set of silvered or gilded wood painted with bright colours in a tapestry design would be ideal in a bedroom with the popular gold or silver walls, and the pattern appears again on bedspread of silver-grey satin.

Monograms on Hats.

MONOGRAMS and club colours have already adorned pockets and scarf ends, and have been placed on almost every conceivable part of a jumper, but the newest spot to have pet colours or initials is on the front of a summer sports hat. Right in the centre is the correct place, and a hat of bois-de-rose stitched linen has the initials of its wearer hand-painted in white and black.

Evening Shawls.

EVENING coats and cloaks are being superseded by the square shawls of gold lame interwoven with vivid colours. These are unlined and reversible, and can be draped in many effective ways by the skilful. Some of the latest have a graceful addition of coloured chiffon petals at the hem, and an original manner of securing these shawls is by a large jewelled clasp placed on one shoulder.

In the Kitchen

Asparagus.

HEAT a tin of asparagus, drain well, and place on very hot plate. Sprinkle with a chopped boiled egg, chopped parsley, salt, and pepper. Fry two tablespoons of brown breadcrumbs in three ounces of butter, and pour over the asparagus. Serve very hot.

Macaroni.

SCALD one cup of thick cream, add two tablespoons of butter and four ounces of grated cheese. Stir till smooth, add salt and red pepper. Put about six ounces of cooked macaroni into a shallow baking dish, and pour mixture over. Fry one cup of breadcrumbs in butter, spread over the top, and serve very hot.

Brussels Sprouts.

BOIL till tender (not too long). Cook 1½ cups of young celery in three tablespoons of butter for three minutes, stirring constantly; add three tablespoons of flour mixed to a smooth liquid paste to the celery. Scald 1½ cups milk and pour in gradually, stirring all the time, until boiling point is reached. Lastly, add the cooked sprouts, season with salt and pepper, and serve as soon as the sprouts are heated through.

Substitute for Eggs.

WHEN eggs are scarce try one tablespoon of gelatine in a little water. Beat to a froth with an egg-beater. This substitute is equal to two eggs.

Living in 1978

HOW people may look and live fifty years hence, with customs strangely changed from those of to-day, was recently visualized at an ideal home exhibition in London.

According to the designers' theory, the home of the future will be so constructed that all rooms will have the desirable sun exposure, regardless of the house's position with relation to the street. Interchangeable walls will be moved by pressure of buttons. Colour schemes and flowerbeds can be shifted. Eating from cartons, destroyed after use, will dispense with dish-washing. Each family will have a limousine-aeroplane.

For convenience and better health, people are expected to live customarily in garments not unlike bathing costumes of to-day, and to bathe under electric—ultra-violet rays.

*The cuckoo stayed his liquid call,
The rose peeped shyly o'er the wall,
The river whispered as it ran,
And silent felt the pipes of Pan,
As you came proudly through the hall.*

*You came! Like Eve before the Fall,
You held a waiting world in thrall;
Would you be with us longer than
The Cuckoo stayed?*

*You came, and lusty men and tall
Straightway became as worms that
crawl;*

*You used no wiles of maid with man,
Nor fleeting smile nor flirted fan;
You were that rarest maid of all—
The Cook Who Stayed!*

—Arthur Wimperis.

"BETTER WAY" COMPETITION No. 3. MONTHLY PRIZES.

ALL women whose homes are to them a source of abiding interest and delight have their own treasured secrets of housekeeping. It may be an unusual recipe, a scheme for brightening an uninteresting room, a labour-saving notion, an idea for decorative work, a dress or toilet hint, or a pet economy. There is always a special method of performing various household tasks—the "better way." The "Radio Record" offers a prize of half-a-guinea each month until further notice for "Better Ways" from our women readers. The right is reserved to publish any entry not awarded a prize on payment of space rates.

Entries must be written in ink, on ONE side of the paper only, and the name and address of the competitor should be written on the back of each entry.

When more than one "Better Way" is submitted by the same competitor, each entry must be written on a separate sheet of paper.

The decision of the Editor is final and binding. A non-de-plume may be used if desired.

The August "Better Way" Competition closes on August 24, and the result will be announced on the women's page on Friday, August 31.

All entries to be addressed: "Verity," c/o "Radio Record," Box 1032, Wellington.

For "Curdled" Mayonnaise.

MAYONNAISE has a way of curdling at the most inopportune moment, when one is in a hurry, and it is usually the hurry which causes it, for the oil is added too fast; or perhaps it may be that the ingredients are too warm. However, there is no use in beating and thinking it may get smooth; it won't! Try this—take another egg-yolk, put it in a dry, cold bowl, and add the curdled mixture a little at a time, as the oil should have been added in the first place. When it is well beaten in, proceed to add the fresh oil slowly.

"With octaves of a mystic depth and height.

*Which step out grandly to the infinite
From the dark edges of the sensual ground!*

*This song of soul I struggle to outbear
Through portals of the sense, sublime
and whole,
And utter all myself into the air."*

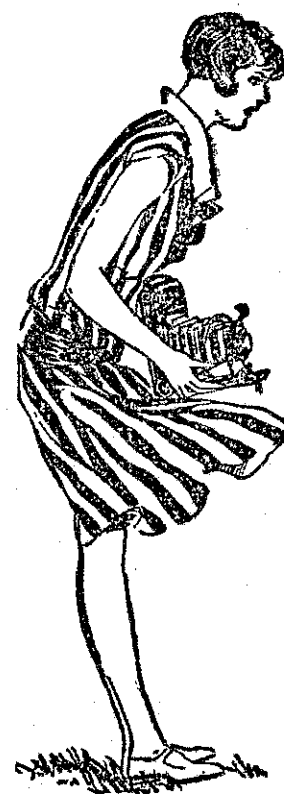
—E. B. Browning.

*"Let us feel that we are alive. . . .
not on our knees, not cringing, not
creeping, but walking on our feet,
erect, unflinching. Let us aid each
other, and grow strong by each other's
help."—Charles Bradlaugh.*

Dame Clara's Romance

THE life story of Clara Butt, written by an old fellow pupil, Winifred Ponder, is full of interesting and intimate details of the great singer's career concerning which her vast adoring public can never hear enough. But the story of her courtship, uniquely romantic, makes a direct appeal to every woman in whose heart romance dies hard. It began on the concert platform when she was appearing with Mr. Kennerley Rumford in duets. In those days it was customary for singers to hold their music, and he used to pencil messages to her on the margins of the songs. Night after night, standing beside him on the platform she would find these little notes as she turned the pages. Then a kindly fate helped the artist wooer by delivering into his hands a ballad which later the two were to make famous the world over—"The Keys of Heaven." One night as they sang the song together, he made his appeal in earnest through the well-known words of the quaint and charming ballad. Clara accepted him in singing the last verse, and the two left the platform engaged, the audience little guessing that life's sweetest song had been sung. To-day Dame Clara holds the heart of millions, all the more because she ardently believes in the gramophone and wireless.

It is easy in the world to live after the world's opinions; it is easy in solitude to live after our own; but the Great Man is he who in the midst of the crowd keeps with perfect sweetness the independence of solitude.—Emerson.



For
Dependable Speed
Extra Latitude
Utter Uniformity
Kodak Film

The world-wide reputation which Kodak Film enjoys is based on constantly satisfactory performance. The phrase "the dependable film in the yellow box" is more than a manufacturer's slogan. It states the fact—universally endorsed by camera users—that every roll of Kodak Film has every quality essential to good pictures. Get British Made Kodak Film.

CAMERA CATALOGUE FREE

OF ALL KODAK DEALERS

Features of Next Week's Programmes

Notes from 1YA

AGAIN listeners will have the pleasure of hearing Madame Irene Ainsley's operatic party in solos and concerted excerpts from "Rose Marie," while on the instrumental side of the programme, the Auckland Trio will include among its items "Scherzo" (Reissiger) and "Chopiniana" (Hosmer), Miss Ina Bosworth charming us with Kreisler's beautiful "Caprice Viennoise." Orchestral selections will be relayed from the Majestic Theatre under the conductorship of Mr. J. J. Whiteford Waugh. Mr. A. B. Chappell will tell of "The War in the North," in continuing his talks on "Old New Zealand."

The special "Mystery Night" programme for Wednesday is referred to elsewhere.

THE main vocalists for Thursday evening will be Mr. Barry Coney's Quartet, who will contribute a number of solos and concerted items, including "Coronach" and "Good Night, Good Night, Beloved." Contralto solos to be rendered by Miss Martha Williamson will include "Sing Merrily To-day," while Miss Dorothy Youd will delight all with a soprano solo, "She Wore a Wreath of Roses." Our instrumentalists for the evening will be Ingall's Hawaiian Orchestra, playing "Hawaiian Melodies," and the Auckland Trio, who will include among their items a selection from "Cavalleria Rusticana." Chopin's "Nocturne in B Major" will be given us by Mr. Cyril Towsey.

CONTRIBUTING to Friday's programme will be the St. Andrew's Quartet, who will render a selection of quartets and ballads, including "Sweet Day, Grow Cool" (German) and "With a Laugh as We Go Round" (Bennett). The Auckland Trio will give selections which will include "Presto Trio in E" (Reissiger), Miss Molly Wright (celist) playing "The Rustic Dance." Mr. H. McLennan (flautist) will include among his items "Murillo" (Terschak).

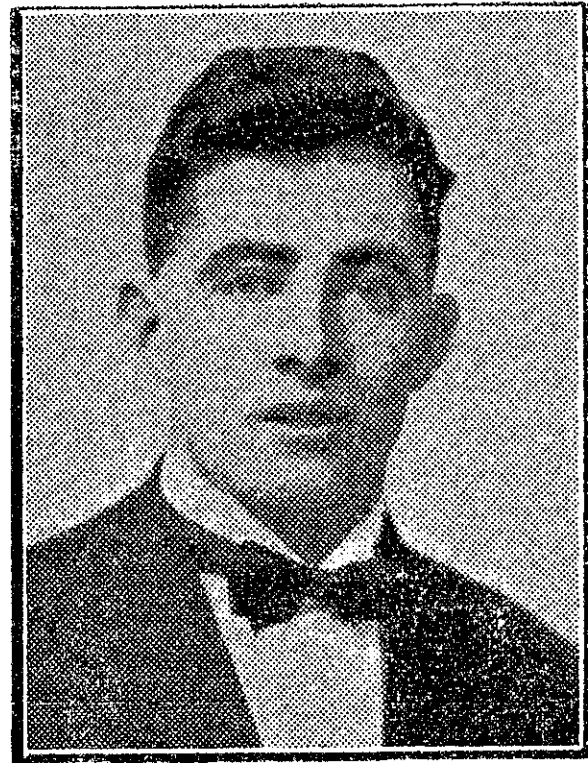
THE ever-popular Lyric Quartet, who will be a feature of Saturday evening's programme, will render "Russian Lullaby" and "In Absence." Mr. Arthur Ripley (tenor) will sing "Lay My Head Beneath a Rose"; Mr. Ernest Thomas, "Oh! to be a Gypsy"; and Mr. H. Richards will render "The Midshipmite," while Mr. A. McElwain, in some humour, will be appreciated. Messrs. Higgott and Morrison will contribute banjo selections, which will include "The Miserere" from "Il Trovatore," and "Sing Me to Sleep." Dance music will be relayed from the Dixieland Cabaret.

Notes from 2YA

MENDELSSOHN, Brahms, and Rubinstein on the "lieder" side. Verdi on the operatic side, Michael Head and Coleridge-Taylor on the "modern English" side, and Wilfred Sanderson and Amy Woodforde-Finden on the "popular" side, will all be represented by vocal numbers to be presented at 2YA by the Ariel Singers

next Monday. Mrs. Kennedy Fraser's arrangements of Hebridean folk-songs are also always interesting. Elocutionary items will be contributed by Mr. A. Stanley Warwick; Mr. Ernest Short, a baritone with a Dominion-wide reputation, will be heard in some very fine numbers; and a brief organ recital will be given by Mr. H. Mount.

THE ensemble numbers to be given by the Orpheus Quartet on Tuesday include "With a Laugh as We Go Round," from "The May Queen," by Sterndale Bennett. Also there are two old popular numbers, "Juanita" and "The Canadian Boat Song." As Mr. Len Barnes will be in Wanganui adjudicating the vocal section of the competitions, his place in the quartet will be taken by Mr. Ray Kemp; Mr. Billy Hart will entertain with songs at the piano; Mr. Doug. Stark, a popular humorist, will be heard in some of his characteristic work; and the



MR. R. R. WILLS OF 3YA.

An elocutionist who has been very successful at competitions and this year carried off championship honours at the recent Christchurch festival. He regularly appears at 3YA.

Ambassador Musical Trio (piano, saxophone, and banjo), will contribute to the instrumental portion of an attractive programme.

FOR Thursday the Warblers Male Quartet have chosen as quartet numbers "In a Gondola" and "When You Played the Organ and I Sang the Rosary." Some excellent solos and duets will also be sung. The band of the First Battalion Wellington Regiment will be responsible for the major portion of the evening's instrumental music, to which the Oakland Trio will also contribute. Humorous elocutionary numbers will be given by Miss Rose Carte.

VARIETY and quality will be the outstanding characteristics of the programme to be broadcast by the Etude Quartet on Friday evening. The concerted numbers will be "Soft and Low" (from the "Mock Doctor," by Gounod), and "See Our Oars with Feathered Spray," by Stevenson. "The Angelus," from "Maritana," will be sung as a trio, and Misses Gretha

Stark and Rita Arnold will sing the beautiful "Barcarolle" from "Tales of Hoffman," with orchestral accompaniment. The duet "Qui Vive," by Planquette, will be sung by Messrs. Frank Skinner and Ray Kemp, the former's solo being "The Fairy Song," from "The Immortal Hour," by Rutland Boughton. Miss Gladagh Russell will make Keats the literary feature of the evening. Mr. Frank May will provide the humorous element, and Miss Eileen Bennett, a pupil of Miss Valerie Corliss, will entertain at the piano.

ONE of 2YA's best Saturday night programmes has been arranged for next week-end, and a rebroadcast by 3YA will be made in order that the crystal set users of Christchurch should have the opportunity of enjoying the type of entertainment provided on Saturdays by 2YA. This programme will be contributed by the Studio Orchestra, the ever popular Melodie Four, Messrs. Berthold and Bent (steel guitar duo), Mr. W. McClellan (humour), and by the Glad Idlers (topical sketch artists).

Notes from 3YA

A CONCERT by the Woolston Band is scheduled for Monday evening at 3YA. As is to be expected from this combination, an excellent programme has been arranged. An equally excellent supporting vocal programme will also be presented by 3YA artists. The always popular Miss Frances Hamerton will be singing and Mrs. Bingham Puddey (mezzo-contralto) will be warmly welcomed after an absence of some months. Male voices will be Mr. Russell Sumner (tenor) and Mr. Jack Smythe (baritone). The items to be sung will include two duets. Elocutionary items this evening will also be a feature. Some of Mr. Harry Instone's humorous contributions will be his own composition. The talented young entertainer, Miss Mavis Kinsella, will be heard in some bright moments at the piano, to her own accompaniment.

THE Radiolians, who usually "stage" a comic opera, will next Wednesday present a miscellaneous programme and a particularly enjoyable entertainment is promised. The concerted numbers include "Maid in the Moon," from "San Toy," "I Know a Bank," and "Come Lads and Lasses." The solos comprise a fine variety of vocal items. Selections by Mr. Beck's orchestra (second appearance at 3YA), recitations by Miss May Turner, pianoforte solos by Miss Aileen Warren, and clarinet solos by Mr. S. E. Munday, will complete the programme.

"THE Old Clock," "Lolita," "Twilight," "The Sword of Ferrara," "Ferryman Love," "The Fairy Pipers," "Laugh and Sing," "Beyond the Dawn," are some of the numbers from the miscellaneous programme which is to be presented by the members of Madame Gower Burns' Grand Opera Quartet in solo and concerted form. Augmenting the excellent vocal programme will be items by the Studio Trio, cello solos by Mr. Harold Beck, cornet duets (by

Messrs. Ohlson and Benson), and elocutionary items by Miss Mavis Ritchie.

A POPULAR miscellaneous programme, concluding with a dance music session, will constitute the entertainment for Friday evening. A feature of the vocal items will be a song cycle, "Songs of Spring and Summer," to be sung by the Dinky Duo, a baritone and contralto combination. This song cycle, which is by Liza Lehmann, will occupy the major portion of the first hour of the programme.

MISS WINIFRED BARRETT, a mezzo-soprano, who is one of the vocalists on Friday evening, is a competition winner. Mr. George Fawcett, also singing on Friday evening, is a very acceptable tenor.

Mr. Campbell Brown will be welcomed back on Friday on one of his all-too-rare appearances in radio. Mr. Brown is a first-class elocutionist.

The dance music for Friday evening will be supplied by the Williams Dance Band.

ON Saturday evening crystal set users in Christchurch will have the opportunity of hearing a 2YA week-end concert. The whole programme, from 8 o'clock till 11, is to be rebroadcast.

Notes From 4YA

THE service to be relayed next Sunday will be from the Methodist Central Mission, and will be a musical service, which has specially been arranged by the Rev. W. Walker, who will preach the sermon. A studio concert will follow this service.

THE band concert for Tuesday next will be provided by the St. Kilda Band, under the conductorship of Mr. James Dixon. Important items on the programme will be the "Tancredi" Overture (Rossini) and euphonium solo with the band in accompaniment, "Simple Avne." The other numbers by the band comprise a selection of most interesting numbers. The artists who will intersperse items with the band music will be Mrs. D. Carty (soprano), Miss Ella Basire (mezzo-soprano), Mr. L. E. Dalley (tenor), and Mr. Bert Rawlinson (baritone). Mrs. D. Carty and Mr. Rawlinson will entertain with a vocal duet, the well-known old Scottish song, "The Auld Hoose." Elocutionary items on Tuesday's programme will be given by Miss Anita Winkel, who will recite among other numbers Kipling's "Glory of the Garden." Mr. Lester Moller will also contribute items.

WEDNESDAY night's programme as usual will be a bright entertainment. An artist to make his first appearance on this evening is Mr. Chris. Harlie, a clever Lancashire comedian, and... a nephew of the famous English comedian, Tom Foy. Chris. Harlie has an inimitable style of his own, and is a born entertainer. He will sing some comic songs with patter, and deliver the humorous recitation, "The Vicar."

MR. BUSTER BROWN, the Scottish comedian, who made his debut a fortnight ago, will again be heard on Wednesday. This time his three numbers will be from the pen of Harry Lauder, "It's Nice when You Love a Wee Lassie," "Rob Roy McIntosh," and "The Boss o' the Hoose." Buster Brown's songs will be enlivened with suitable patter.

SOME of the latest and recent song hits will be rendered by Miss Betty Roberts (light soprano), including "After I Say I'm Sorry" and "Why Don't You Smile?" and by Miss Thelma Blackman (light mezzo-soprano), who will feature "Honey Bunch" and "My Idea of Heaven."

OF course, a bright programme like Wednesday's must have bright music, and this will be supplied by the Dunedin Banjo Trio (playing popular song hits. Mr. J. McCaw, brilliant exponent of the saxophone, will play the "Persian Lamb Rag," "Cherie, I Love Yop," and Dvorak's "Humoresque." Piano-accordion solos will be played by Mr. E. Heaney. Sketches of a very humorous nature will be contributed by Miss Sheila Neilson and Mr. J. B. McConnell.

AN interesting programme is arranged for Friday. As usual, the first portion will be devoted to studio items, the second portion from 9 p.m. comprising a relay of dance music. Miss Molly Vickers (mezzo-soprano), Mr. L. M. Cachemaille (baritone), will be the vocalists. Miss Madge Yates (elocutionist), Mr. George Christie (cornetist), and Mrs. Ernest Drake (studio pianist) complete the other items on the programme. Mrs. Ernest Drake will play Debussy's charming little composition, "Rain in the Garden."

A MUSICAL treat is in store for listeners on Saturday evening. The 4YA Harmonists have chosen three particularly fine numbers: "The Londonderry Air," from which the popular song "Danny Boy" was arranged, Wheeler's "Cradle Song," and Pinsuti's "Good-night, Good-night, Beloved." Each member of the quartet will contribute solo items. The numbers by an instrumental trio will include "Ave Maria" and "Alita." Mr. A. R. Watson (violinist), with Mrs. Ernest Drake (studio pianist), and Mr. J. W. Stewart (flautist) will each render solo items. Elocutionary numbers will be given by Miss Roberta Williams.

Children's Sessions

AT 1YA.

TUESDAY, August 28.—Uncle George, and with him Mrs. Arthur Griffith's Rosebud Entertainers, giving sketches, dialogues, and a pantomime. Aunt Nellie will also have some stories to tell.

WEDNESDAY—Uncle Tom will entertain you with songs, stories and birthday greetings. Cousin Keith will also sing.

THURSDAY—Here's some welcome news! St. George's Boy Scouts will be here and entertain you with choruses, rounds, songs and recitations, to say nothing of the final Boy Scouts' haka. There will be some scouting stories told by Peter Pan.

FRIDAY—A merry and bright hour to-night. Nod and Aunt Jean have with them "The Sunshine Girls," so it is sure to be a cheery evening.

SATURDAY—What is in the Glass Slipper this evening, Cinderella? "Oh, some little cousins playing the piano, and Uncle Mack with some of his jungle stories."

SUNDAY—Children's Song Service, conducted by Uncle Leo, assisted by Cousins from Knox Presbyterian Sunday School.

AT 2YA.

MONDAY, AUGUST 27—Aunt Gwen and Uncle Jeff and the pupils of Mrs. Isobel Halligan will all help to wile away this happy hour. The little girls with their songs and recitations, Uncle Jeff with greetings and puzzles, and Aunt Gwen will read one of her bedtime stories.

TUESDAY—To-night Big Brother Jack will be here to talk to his little brothers and sisters, and for your entertainment, children, Miss Agnes Wright has promised to bring her pupils, and with them will be little Kathleen, pupil of Miss Mary Cooley.

THURSDAY—Aunt Gwen will read your bedtime story to-night, little ones, and wish the birthday children many happy returns

of the day. There will be songs from Cousin Zera and many enjoyable items from Cousins Joyce, Dulcie and Zac, and Uncle Harry.

FRIDAY—Friday brings Uncle Ernest and his wonderful stories, and with Uncle Ernest, children, will be the 8th Wellington East Girls' College Company of Guides under Mrs. Robottom. Have you ever heard a comb band? Well, just wait until Friday comes and then you will hear the Guides' Comb Band.

SATURDAY—Saturday, the party night of Radioland. Uncle Toby and Aunt Gwen will be there to enjoy the party and spread cheer to little hearts, and oh! children, what do you think?—Mr. Royal Nelson says the drum and trumpet band from Petone may come again to give us all a happy hour. Won't that be lovely?

SUNDAY—The Children's Song Service will be conducted by Uncle Ernest, assisted by the Vivian Street Baptist Sunday School Choir, under Mr. John Pirie.

AT 3YA.

MONDAY, AUGUST 27:

As leader on each Monday night, Comes "Scatterjoy," ready and bright.

In her 3YA name
She soon will win fame,
"Land of Nod" is her song for
"Good-night."

WEDNESDAY—

Uncle Peter and Mother Hubbard come too,

With stories and jokes not a few:
When he reads a weird tale,
He stops short without fail,
At a point where we're creepy
all through.

THURSDAY—

On Thursday "Pat" and
"Chuckie" we greet,
Their "How-do-you-do" song is
a treat.

Good stories they can tell,
Jolly songs sing as well,
And their humour is clever and
neat.

FRIDAY—

On Friday Big Brother takes lead,
Receiving warm welcome indeed.
Then each girl and boy,
Nice stories enjoy;
And to his wise counsel give heed.

SATURDAY—

Uncle Sam, on each Saturday night,
Keeps everyone happy and bright.
As the little folks listen.
To him, their eyes glisten
Oh! they hail Uncle Sam with delight!

AT 4YA.

TUESDAY, AUGUST 28—A programme given by the chickabiddies. Songs, recitations, and musical selections, all given by "wee 'uns" under seven years of age. They will certainly be worth listening to. And Brother Bill will be there with stories for all "the wee 'uns" of the family, and for older members, too. The radio postie will go his rounds as usual.

FRIDAY—Another brass band; this time the band of the Catholic Boys' Orphanage. Mr. T. Phelan is the headmaster, and, my word, these boys can play. They sing part songs, too. As well as being a brass band, therefore, they are a jolly fine choir. And they sing solos, and duets. So you see what a feast of good things is coming from 4YA, to-night. Auntie Sheila and Big Brother Bill will be at the "mike" with riddles and stories; and the radio postie will be wherever he is sent by Aunt Sheila and Big Brother Bill.

NOT infrequently beginners question the meaning of the numbers on their tuning dials. In most cases these numbers are merely put there to afford an opportunity of recording the positions on the dials which mark the places to find distant stations once they have been located. On many of the latest sets a second row of figures is marked on the tuning dials indicating wavelengths in kilocycles. These figures furnish an aid in finding a distant station when its wavelength is known.

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Full Programmes for Next

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Sunday, August 26

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

- 9 a.m.: Result of "All Blacks" match in South Africa.
 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Selected studio items.
 4.30: Close down.
 6.0: Children's song service conducted by Uncle Leo, assisted by cousins from Beresford Street Sunday School.
 6.55: Relay of service from Auckland Baptist Tabernacle. Preacher, Rev. Joseph Kemp; organist and choirmaster, Mr. Arthur E. Wilson.
 8.30: Relay of Municipal Organ Recital from Town Hall. Organist, Mr. Maughan Barnett—Grand organ selections.
 9.30: God Save the King.

2YA, WELLINGTON (420 METRES), SUNDAY, AUGUST 26.

- 9 a.m.: Result of All Blacks' match in South Africa.
 3 p.m.: Afternoon session—Selected studio items.
 6.0: Children's Sunday service, conducted by Uncle Ernest, assisted by St. Aiden's Sunday School Choir.
 7.0: Relay of service from Terrace Congregational Church. Preacher, Rev. Ernest R. Weeks. Organist and choirmaster, Mr. H. Brusey.
 8.15 (approx.): Relay of band recital of Wellington Municipal Tramways Band from His Majesty's Theatre (conductor, Mr. T. Goodall).
 God Save the King.

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

- 9 a.m.: Result of "All Blacks" match in South Africa.
 3 p.m.: Afternoon session.
 An organ recital by Mr. Ernest Firth, F.R.C.O., played on the Durham Street Methodist Church organ, will be interspersed during the afternoon session at 3.15 p.m. and 3.45 p.m.
 4.30: Close down.
 5.30: Children's song service conducted by Uncle David, assisted by children from Opawa Methodist Sunday School.
 6.30: Relay of evening service from Durham Street Methodist Church. Preacher: Rev. W. T. Blight, B.A.; organist and choirmaster, Mr. Ernest Firth, F.R.C.O.
 8.15 (approx.): Rebroadcast of band concert by Wellington Municipal Tramways Band, relayed from His Majesty's Theatre, Wellington.
 God Save the King.

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

- 9 a.m.: Town Hall chimes.
 9.2: Result of "All Blacks" match in South Africa.
 9.15: Close down.
 5.30: Children's song service conducted by Big Brother Bill, assisted by children from the Trinity Church Methodist Sunday School.
 6.30: Relay of service from the Methodist Central Mission. Preacher, Rev. W. Walker; organist, Mr. Chas. A. Martin.
 8.0: Studio concert.
 9.15: Close down.

Monday, August 27

1YA, AUCKLAND (333 METRES), MONDAY, AUGUST 27.

SILENT DAY.

2YA, WELLINGTON (420 METRES), MONDAY, AUGUST 27.

- 3 p.m.: Chimes of the General Post Office clock, Wellington.
 3.1: Selected gramophone items.
 4.30: Sporting results to hand.
 Selected gramophone items.
 5.0: Close down.
 6.0: Children's hour, conducted by Aunt Gwen, Uncle Jeff, and the pupils of Mrs. Isobel Halligan. Recitation, Cousin Doris, "Six Times Nine" (Anon.). Chorus, cousins, "My Teddy" (Sherrington). Story, Aunt Gwen. Recitation, Cousin Pattie, "Kamate" (Te Rangi Hikiroa). Birthdays, Uncle Jeff. Duet and chorus, Cousins Nancy and Ethel, "Coon Boys' Song" (Turner). Birthdays, Aunt Gwen. Recitation, Cousin Tom, "The Cupboard" (W. De La Mare). Puzzle, Uncle Jeff. Recitation, Cousin Mary, "Knights and Ladies" (A. A. Milne). Solo and chorus, Nancy and cousins, "The Dream Man" (Weston and Co.).
 7.0: Good-night song.
 7.1: News session, market reports, and sports results.
 7.25: Lecturette—Mr. F. J. Cave, technical expert, Shell Petroleum Company of Australia, "Power Farming."
 7.40: Lecturette—Mr. H. South, "Books—Grave and Gay."
 8.0: Chimes of the General Post Office clock, Wellington.
 8.1: Overture—The Orchestra, "Peter Schmol" (Weber).
 8.9: Duet—Miss Ngaire Coster and Mr. Roy Hill, "Home to Our Mountains" from "Il Trovatore" (Verdi).
 8.13: Bass solos—Mr. J. M. Caldwell, (a) "Nancy's Hair" (Hebridean folk song); (b) "Give a Man a Horse he Can Ride" (Head).
 8.19: Instrumental trio—Studio Trio, "Trio in D Minor" (Reissiger).
 8.29: Elocutionary item—Mr. A. Stanley Warwick, "The Story of a Miniature" (Pemberton).
 8.39: Instrumental item—The Orchestra, "Surprise Symphony" (Weber).
 8.49: Baritone solos—Mr. Ernest Short, (a) "I'm a Roamer" (Mendelssohn); (b) "Inter Nos" (MacFadyen); (c) "The Rooster" (Wells).
 8.59: Relay of organ solos—Mr. Henry Mount, (a) "Offertoire in F" (Hartman); (b) "Marche Militaire" (Schubert).
 9.9: Weather report and announcements.
 9.10: Mezzo-contralto—Miss Ngaire Coster, (a) "Till I Wake" (Woodforde-Finden); (b) "My Dear Soul" (Sanderson).
 9.16: Instrumental item—The Orchestra, repeat number.
 9.24: Tenor solo—Mr. Roy Hill, (a) "The Asra" (Rubinstein); (b) "I Feel Thy Perfume Wafted" (Rubinstein).
 9.30: Elocutionary item—Mr. A. Stanley Warwick, "The Bell Buoy" (Kipling).
 9.35: Vocal quartet—Ariel Singers, "Isle of Beauty" (Coleridge-Taylor).
 9.38: Instrumental items—The Orchestra, (a) "Nocturne, Op. 9, No. 2" (Chopin); (b) "Spanish Dance" (Sarasate).
 9.46: Tenor solo—Mr. Roy Hill, "In Summer Fields" (Brahms).
 9.49: Vocal quartet—Ariel Singers, "The Victor's Song" (Mendelssohn).
 9.52: Instrumental item—The Orchestra, "Nell Gwynn Dances" (E. German).
 10.2: God Save the King.

3YA, CHRISTCHURCH (306 METRES), MONDAY, AUGUST 27.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 6.0: Children's session—Scatterjoy. Story for the Tiny Tots by Scatterjoy, "Bird Baths and Bird Houses." Songs by Cousins Pat and Gladys. Birthday greetings. Story by Scatterjoy, "Pillows of all Lands—Hard and Soft." Songs by Cousin Kathleen. Recitations by Cousin Phyllis. Good-night song, "The Land of Nod."
 7.15: News session.
 8.0: Chimes. Studio concert by the Woolston Band, assisted by 3YA artists.
 8.1: March—Band, "Mad Major" (Alford).
 Overture—Band, "Poet and Peasant" (Suppe).
 8.13: Baritone solos, followed by soprano and tenor duet, Mr. Jack Smythe, (a) "Devotion" (Wood); (b) "Yeoman's Wedding Song" (Poniatowski); (c) "Onward, Onward," from the "Golden Legend" (Sullivan).
 8.24: Humorous recital—Mr. H. Instone, "An Original Piece" (own composition).
 8.29: Soprano solo—Miss Frances Hamerton, recitative and aria from oratorio "Eli," "I Will Extol Thee" (Costa).
 8.34: Waltz—Band, "Dream Melody" (Kockler).

*Celebrated
Artists*

with a

Celebrated

FADA



- 6.0: Town Hall chimes.
 6.1: Children's session—Big Brother Bill. Happy Folks' Anthem. The musical and elocutionary part of the programme will be provided by a group of infant pupils taught by Miss Noeline Parker. All the pupils will be under seven years of age.
 7.15: News session.
 8.0: Town Hall chimes. Concert by the St. Kilda Band, under the baton of Mr. Jas. Dixon, and items by assisting artists.
 8.1: March—Band, "Fearless and Free" (Hawkins).
 8.5: Soprano solos—Mrs. D. Carty, (a) "Jessie's Dream" (Blockley); (b) "Auld Scotch Songs" (traditional).
 8.12: Recital—Mr. Lester Moller, "Hints on Geography" (Stanford).
 8.18: Waltz—Band, "Honey Flowers" (Rimmer).
 8.26: Tenor solo—Mr. L. E. Dalley, "Ah, Moon of My Delight" (Lehmann).
 8.29: Recitals—Miss Anita Winkel, (a) "The Glory of the Garden" (Kipling); (b) "Foolish Questions" (Anon).
 8.37: Euphonium solo with band accompaniment, "Simple Avue" (Thome).
 8.43: Mezzo-soprano solos—Miss E. Basire, (a) "Thanks be to God" (Dickson); (b) "Homeland" (Drummond).
 8.49: Descriptive selection—Band, "A Sailor's Life" (Cope).
 9.2: Weather forecast.
 9.5: Baritone solo—Mr. Bert Rawlinson, "The Meeting of the Waters" (Moore).
 9.9: Recitals—Mr. Lester Moller, (a) "Men of the English Race" (Davey); (b) "The New Food" (Leacock).
 9.18: March—Band, "Captain of the Guard" (Jupp).
 9.22: Vocal duet—Mrs. D. Carty and Mr. Rawlinson, "The Auld Hoose" (Moffatt).
 9.26: Tenor solos—Mr. L. E. Dalley, (a) "When Childa Plays" (Davies); (b) "My Heart Sings to You."
 9.30: Overture—Band, "Tancredi" (Rossini).
 9.38: Mezzo-soprano solo—Miss E. Basire, "Down Here" (Brahe).
 9.41: Child impersonation—Miss Anita Winkel, "I've Lost My Dog" (Green).
 9.44: Hymn with variations—Band, "Spanish Chant" (arr. Rimmer).
 9.50: Baritone solos—Mr. Bert Rawlinson, (a) "Auld Lang Syne" (Anon); (b) "Father O'Flynn" (Stanford).
 9.56: March—Band, "Vivacity" (Carter).
 10.0: God Save the King.

Wednesday, August 29

1YA, AUCKLAND (333 METRES), WEDNESDAY, AUGUST 29.

(See Mystery Night Programme on page 31.)

1YA, WELLINGTON (420 METRES), WEDNESDAY, AUGUST 29.

SILENT DAY.

3YA, CHRISTCHURCH (306 METRES)—WEDNESDAY, AUGUST 29.

3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.

- 6.0: Children's hour—Opening chat and story for the Tiny Tots by Uncle Jack. Piano duet, "Good-night," by Cousins Geoff and Joan. Songs by Cousin Joan, "Little Pal of Long Ago" and "Japanese Butterfly Land." Stories by Uncle Jack, an Indian story for the boys and a school story for the girls. Birthday greetings. Recitations by Cousin Pat, "Vespers" and "If You Meet a Fairy." Good-night song, "Just a Song at Twilight."

7.15: Addington stock market reports.

8.0: Chimes.

- 8.1: Rebroadcast of 1YA, Auckland (conditions permitting).
 8.7: Vocal quartet—Radiolians, "Maid in the Moon" (from "San Toy"), (Jones).
 8.11: Soprano solos—Mrs. Claris Shaw, (a) "Auld Rogin Gray" (Scottish traditional); (b) "Waltz Song" (from "Tom Jones"), (German).
 8.19: Pianoforte solos—Miss Aileen Warren, (a) "Nocturne in E Minor No. 19" (Chopin); (b) "Gigue Anglaise" (English jig), (Moffatt).
 8.27: Bass solos—Mr. W. J. Richards, (a) "The Curfew" (Gould); (b) "The Admiral's Broom" (Bevan).
 8.35: Orchestral selection—Studio Orchestra (conductor, Mr. H. Beck), "Le Seigneur de Kermor" (Marie).
 8.45: Recital—Miss May Turner, "The Girl Who Loved Him So" (Waterman).
 8.50: Clarinet solo—Mr. S. E. Munday, "Liebeslied" (Kreisler), (with orchestral accompaniment).
 8.55: Soprano and contralto duet—Radiolian Duo, "I Know a Bank Where the Wild Thyme Grows" (Old English).
 8.59: Weather forecast.
 9.0: Overture.
 9.5: Vocal quartet, followed by contralto solos—The Radiolians, (a) "Come, Lassies and Lads" (Old English); (b) "The Fairylough" (Stanford); (c) "Mignonne, Here is April" (Del Riego).
 9.16: Orchestral selections—Studio Orchestra, (a) "Humoresque" (Dvorak); (b) "Athalia March" (Mendelssohn).
 9.26: Tenor solos—Mr. Gregory Russell, (a) "Jack and Jill" (Sanderson); (b) "At the Mid Hour of Night" (Williams).
 9.34: Humorous recitals—Miss May Turner, (a) "The Catechist" (Kent); (b) "Miss Edith Helps Things Along" (Bret Hart).
 9.40: Bass solo, followed by soprano solo—Mr. W. J. Richards and Mrs. Claris Shaw, (a) "Good Morning, Brother Sunshine" (Lehmann); (b) "Home That is Calling For Me" (Drummond).
 9.48: Orchestral selection—Studio Orchestra, "Waltz of the Flowers" (Tschalkowsky).
 9.53: Tenor and bass duet—Radiolian Male Duo, "The Huntsmen's Chorus" (Weber).
 God Save the King.

4YA, DUNEDIN (463 METRES)—WEDNESDAY, AUGUST 29.

7 p.m.: Town Hall chimes.

7.1: Request gramophone recital.

7.40: News session.

8.0: Town Hall chimes.

- 8.1: Relay of orchestral overture from the Octagon Theatre Orchestra, under the direction of Monsieur Henri de Rose (Mus. Bac.).
 8.11: Humorous song and recital—Mr. Chris. Harlie, (a) "The Blacksmith's Good-bye" (Rutherford); (b) "The Vicar" (Harlie).
 8.20: Saxophone solo—Mr. J. McCaw, "Humoresque" (Dvorak).
 8.24: Light mezzo-soprano solos—Miss Betty Roberts, (a) "The Little House Upon the Hill" (Macdonald); (b) "After I Say I'm Sorry" (Donaldson).
 8.32: Popular songs—Dunedin Banjo Trio, (a) "Me and My Shadow" (Dreyer); (b) "Souvenirs" (Nicholls); (c) "Any Ice To-day" (Ballard).
 8.42: Humorous sketch—Miss Sheila Neilson and Mr. J. B. Connell, selected.
 8.50: Scottish comic song—Mr. Buster Brown, "It's Nice When You Love a Wee Lassie" (Lauder).
 8.54: Piano-accordion solos—Mr. E. Heaney, (a) "Blue Bird" (Nicholls); (b) selected.
 9.0: Weather forecast.
 9.2: Popular song—Miss Thelma Blackman, "At Sundown" (Donaldson).
 9.6: Relay of orchestral music from the Octagon Theatre.
 9.15: Humorous song—Mr. Chris Harlie, "Are You Working" (Sanford).
 9.19: Saxophone solos—Mr. J. McCaw, (a) "Persian Lamb Rag" (Menrishi); (b) "Cherie I Love You" (Goodman).
 9.25: Light mezzo-soprano solo—Miss Betty Roberts, "Why Don't You Smile?" (Schwartz).
 9.29: Popular song hits, Dunedin Banjo Trio, (a) "Just Another Day" (Turk); (b) "For My Sweetheart" (Donaldson); (c) "Hi Ho, the Merrio" (Conrad); (d) "Ho, If I Only Had You" (Friend).
 9.39: Humorous sketch—Miss Sheila Neilson and Mr. J. B. McConnell, selected.
 9.45: Scottish comic songs—Mr. Buster Brown, (a) "Rob Roy McIntosh" (Lauder); (b) "The Boss o' the Hoose" (Lauder).
 9.54: Piano-accordion solo—Mr. E. Heaney, "Intermezzo" (from "Cavalleria Rusticana"), (Mascagni).
 9.57: Popular songs—Miss Thelma Blackman, (a) "Honey Bunch" (Friend); (b) "My Idea of Heaven" (Johnston).
 10.3: Close down.

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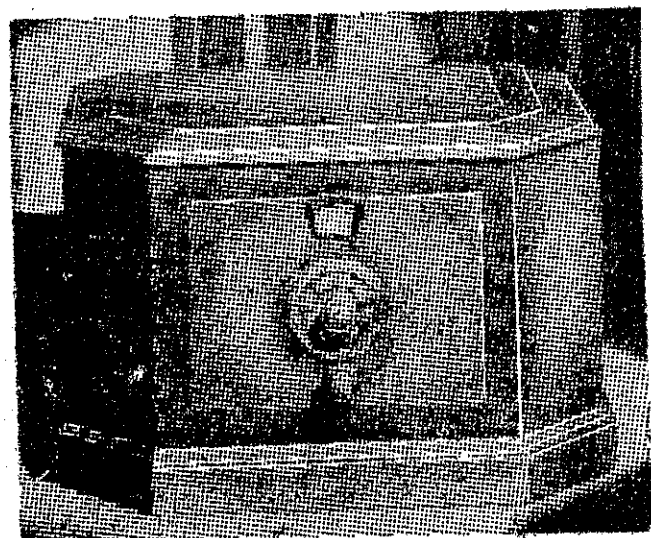
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Amalgamated WORLDWIDE WIRELESS **Wireless**
(Australasia) Ltd.

BOX 830 WELLINGTON

Thursday, August 30

1YA, AUCKLAND (333 METRES), THURSDAY, AUGUST 30.

- 3 p.m.: Afternoon session—Selected studio items.
 3.30: Talk on "Gas Cooking," by a representative of the Auckland Gas Company.
 3.45: Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session, conducted by Peter Pan, assisted by St. George's Boy Scouts in choruses, rounds, songs, and recitations. Letters and birthdays. Bedtime stories. Closing chorus and haka by Scouts.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Orchestral overture—"Fingal's Cave" (Mendelssohn).
 8.9: Vocal quartet—Mr. Barry Coney's Quartet, "Coronach" (Bantock).
 8.13: Instrumental trio—Auckland Trio, "Finale Trio in D" (Bache).
 8.22: Contralto solo—Miss Martha Williamson, "Sing Merrily To-day" (Phillips).
 8.26: Wurlitzer organ record, (a) "Cheeri-Beer-Be" (Young); (b) "At Sundown" (Donaldson).
 8.34: Baritone solo—Mr. Barry Coney, "A Memory" (Thomas).
 8.38: Instrumental—Ingall's Hawaiian Orchestra, (a) "Palakiko Blues" (Ferera); (b) "The Rosary" (Nevin).
 8.46: Talk on "Great Authors," by Culford Bell.
 8.56: Soprano solo—Miss Dorothy Youd, "She Wore a Wreath of Roses" (Knight).
 9.0: Weather forecast.
 9.1: Orchestral selection—"Dollar Princess" (Hall).
 9.9: Tenor solos—Mr. Roger Errington, (a) "Once Again" (Sullivan); (b) "Parted" (Tosti).
 9.16: Pianoforte solo—Mr. Cyril Towsey, "Nocturne in B Major" (Chopin).
 9.21: Contralto solo—Miss Martha Williamson, "Yonder" (Oliver).
 9.25: Banjo solos—Record, (a) "Coontown Breezes" (Papsworth); (b) "College Rag" (Hunter).
 9.33: Baritone solo—Mr. Barry Coney, "Oh, the Oak and the Ash" (seventeenth century).
 9.38: Instrumental—Ingall's Hawaiian Orchestra, (a) "Aloha, Sunset Land" (Kawelo); (b) "Dreamy Hawaii" (Hampton); (c) "Tell Me" (Little).
 9.47: Soprano solo—Miss D. Youd, "Trysta" (Sibelius).
 9.51: Instrumental trio—Auckland Trio, selection from "Cavalleria Rusticana" (Mascagni).
 9.58: Vocal quartet—Mr. Barry Coney's Quartet, "Good Night, Good Night, Beloved" (Pinsuti).
 10.0: God Save the King.

2YA, WELLINGTON (420 METRES), THURSDAY, AUGUST 30.

- 3 p.m.: Chimes of the General Post Office clock, Wellington.
 3.1: Selected gramophone items.
 4.30: Sporting results to hand.
 Selected gramophone items.
 5.0: Close down.

Radio Doctor Yes?

OUR RADIO DEPARTMENT IS AT YOUR SERVICE

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Repairs of all description, sets rewired, transformers renewed, testing. Advice.

RING 20—937.

Gruars Battery House
Radio Dept.

- 6.0: Children's hour, conducted by Aunt Gwen. Steel guitar solo, Cousin Zac, "Medley." Recitation, Cousin Joyce, "The Selfish Goblin" (Anon.). Song, Cousin Zena, "My Treasure" (Drummond). Birthdays, Aunt Gwen. Song, Uncle Harry, "Sonny" (Meale). Recitation, Cousin Dulcie, "The Owl and the Pussy Cat" (Anon.). Song, Cousin Zena, "The Fairies' Jumble Sale" (Drummond). Recitation, Cousin Joyce, "Jemina" (Longfellow). Steel guitar solo, Cousin Zac, "Medley." Recitation, Cousin Dulcie, "Vesper" (A. A. Milne). Accordion solo, Uncle Harry, "Medley." Bedtime story, Aunt Gwen.
 7.0: News session, market reports, and sports results.
 7.40: Lecture—Mr. L. Ashcroft Edwards, "Of Interest to Motorists."
 8.0: Chimes of the General Post Office clock, Wellington.
 Studio concert by the Band of the 1st Battalion Wellington Regiment (conductor, Lieut. B. J. Shardlow), assisted by 2YA artists.
 8.1: Overture—1st Battalion Wellington Regimental Band, "The Crimson Star" (Greenwood), "The King's Guard" (Keith).
 8.13: Vocal quartet—The Warblers, "In a Gondola" (Linders).
 8.17: Novelty—The Oakland Trio, (a) "Medley of Popular Marches" (MSS.); (b) "Hawaiian March" (Awai-Pali).
 8.24: Tenor solo—Mr. Stewart Nelson, "At Dawning" (Wakefield).
 8.27: Humour—Miss Rose Carte, "A Motor Ride" (Fisk).
 8.33: Selection—1st Battalion Band, "Gems from Sullivan's Operas" (Ord Hume).
 8.45: Bass solo—Mr. T. C. Wood, "Archie of the Royal Air Force" (Longstaffe).
 8.48: Tenor solo—Mr. W. E. Elliott, "Dear, on a Night Like This" (Conrad).
 8.52: Euphonium solo—Corpl. J. Brittain, "The Cavalier" (Sutton).
 March—1st Battalion Band, "Through Bolts and Bars" (Urbach).
 9.1: Weather report and announcements.
 9.3: Vocal quartet—The Warblers, "When You Played the Organ and I Sang the Rosary" (Gilbert).
 9.7: Novelty—The Oakland Trio, (a) "Dream Kisses" (Jerome); (b) "Two Little Blue Birds" (Kern).
 9.13: Baritone solos—Mr. Harry Matthews, (a) "All Through the Night" (traditional); (b) "Achal by the Sea" (Lawrence).
 9.19: Selection—1st Battalion Band, "Tancredi" (Rossini).
 9.29: Vocal duet—Messrs. Stewart Nelson and T. C. Wood, "Solenne in Quest Ora" from "Forza del destino" (Verdi).
 9.33: Humour—Miss Rose Carte, (a) "How Mrs. Brown Chopped the Wood"; (b) "The Wife Who Sat Up."
 9.40: Tenor solo—Mr. Stewart Nelson, "A Memory" (Paul).
 9.43: Bass solos—Mr. T. C. Wood, (a) "Mavourneen" (Aylward); (b) "The Living God" (O'Hara).
 9.50: Humoresque—1st Battalion Band, "Who's Dat a-calling?" (Truman).
 March—1st Battalion Band, "Old Comrades" (Teike).
 10.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—THURSDAY, AUGUST 30.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session—Chuckie and Aunt Pat. Opening song, "How-Do-You-Do?" Musical sketch, Chuckie and Aunt Pat, "The Waltz of the Flowers." Song, Cousin Phil, "The Five Little Picaninies." Birthday greetings. Stories, "Alice in Wonderland" and "The Fur Traders." Good-night song, "Come Along You Little Ones."
 7.15: News session.
 8.0: Chimes.
 8.1: Overture.
 8.7: Contralto solo, followed by tenor solo—Mrs. Ann Harper and Mr. Harold Prescott, (a) "The Old Clock" (Drummond); (b) "Lolita" (Buzzi-Pecchia).
 8.15: 'Cello solos—Mr. Harold Beck, (a) "Lullaby" (MacFadyen); (b) "Harlequin" (Popper).
 8.23: Soprano and baritone duet—Madame Gower-Burns and Mr. Clive Hindle, "Twilight" (Lehmann).
 8.27: Instrumental trio—Christchurch Broadcasting Trio, "Andante and Scherzo" (Mendelssohn).
 8.37: Baritone solo, followed by soprano solo—Mr. Clive Hindle and Madame Gower-Burns, (a) "The Sword of Ferrara" (Bullard); (b) "Ferryman Love" (Borsdorf).
 8.45: Cornet duet—Messrs. R. Ohlson and C. Benson, "Friendship" (Le Font).
 8.50: Recital—Miss Mavis Ritchie, "Juliet's Love For Romeo" (from "Romeo and Juliet," Act 2, Scene 2), (Shakespeare).
 8.56: Weather forecast.
 8.58: Overture.
 9.3: Tenor and contralto duet, followed by contralto solos—Mr. Harold Prescott and Mrs. Ann Harper, and Mrs. Ann Harper, (a) "Tell Her I Love Her So" (Le Faye); (b) "Trees" (Rasbock); (c) "The Fairy Pipers" (Brewer).
 9.13: Instrumental trios—Christchurch Broadcasting Trio, (a) "A La Bied Aimee" (Schutt); (b) "Autumn and Winter" (Glazounow).
 9.22: Tenor solos, followed by soprano solos—Mr. Harold Prescott and Madame Gower-Burns, (a) "Laugh and Sing" (Hope Temple); (b) "In Sweet September" (Drummond); (c) "Allah be With Us" (Wordford-Finden); (d) "Violets" (Wright).
 9.34: Cornet duet—Messrs. R. Ohlson and C. Benson, "Jupiter and Mars" (Bulch).

- 9.39: Baritone solos—Mr. Clive Hindle, (a) "Duna" (McGill); (b) "Beyond the Dawn" (Sanderson).
 9.46: Recital—Miss Mavis Ritchie, "The Usual Way" (Weatherley).
 9.51: Instrumental record—Flute quartet, "The Carnival of Venice" (arr. Stainer).
 9.59: Vocal quartet—Grand Opera Quartet, "London" (German).
 God Save the King.

4YA, DUNEDIN (463 METRES), THURSDAY, AUGUST 30.

SILENT DAY.

Friday, August 31

1YA, AUCKLAND (333 METRES), FRIDAY, AUGUST 31.

- 3 p.m.: Afternoon session, selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session, Nod and Aunt Jean, opening chorus by Sunshine Girls, "Cheer, Boys, Cheer"; song, Aunt Jean, selected; letters and birthdays; chorus, Sunshine Girls, "Little Miss Muffett"; jokes and conundrums, Nod and Aunt Jean; song, Aunt Jean, "Fairies' Lullaby"; storytime; chorus, Sunshine Girls, "Coming Through the Rye."
 7.15: News and market reports.
 7.45: Close down.
 8.0: Chimes.
 8.1: Orchestral overture, "The Bohemian Girl" (Balfe).
 8.9: Vocal quartet, St. Andrew's Quartet, "Sweet Day, Grow Cool" (German).
 8.13: Flute solo, Mr. H. McLennan, "Murillo" (Terschak).
 8.18: Tenor solo, Mr. Robert Peter, "Serenata" (Toselli).
 8.22: Instrumental trio, Auckland Trio, "Presto Trio in E" (Reissiger).
 8.31: Contralto solo, Miss P. Gribben, "Beloved, it is Morn" (Aylward).
 8.35: Guitar solos, Record, (a) "In the Heart of Hawaii" (Parish); (b) "The St. Louis Blues" (Handy).
 8.43: Bass solo, Mr. A. Colledge, "Vulcan's Song" (Gounod).
 8.48: Cello solo, Miss Molly Wright, "Rustic Dance" (Squire).
 8.53: Vocal quartet, St. Andrew's Quartet, "With a Laugh as we go round" (Bennett).
 8.58: Weather forecast.
 9.0: Orchestral selection, "Hearts and Diamonds" (Der Orloff).
 9.8: Debate, Mr. F. W. Barker and Mr. J. H. Manins, "That Time-payment Systems are not Conducive to Public Welfare."
 9.28: Flute solos: Mr. H. McLennan, (a) "Andante" (Molique); (b) "The Whirlwind" (Krantz).
 9.36: Vocal quartet, St. Andrew's Quartet, "Awake, Awake" (Bennett).
 9.40: Accordion record, (a) "Russian Rag" (Cobb); (b) "Turkey in the Straw" (Bonnell).
 9.47: Soprano solo, Miss L. Solomon, "A May Morning" (Denza).
 9.51: Instrumental trio, Auckland Trio, selection, "Samson and Delilah" (Saint-Saens).
 9.58: Vocal quartet, St. Andrew's Quartet, "Love is Meant to Make Us glad" (German).
 10.2: God Save the King.

2YA, WELLINGTON (420 METRES), FRIDAY, AUGUST 31.

- 3 p.m.: Chimes of the General Post Office clock, Wellington.
 3.1: Selected gramophone items.
 4.30: Sporting results to hand.
 Selected gramophone items.
 5.0: Close down.

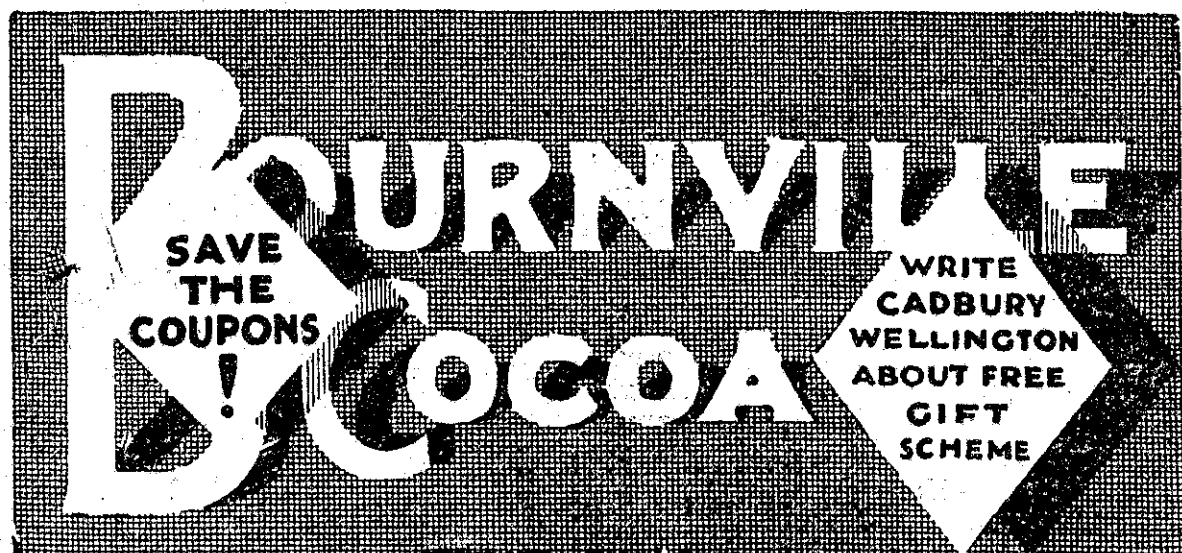
- 6.0: Children's hour—Uncle Ernest, assisted by Eighth Wellington East Girls' College Company of Guides, under Mrs. Robottom. Song, The Guides, selected. Recitation, a Guide, selected. Birthdays, Uncle Ernest. Comb Band, The Guides, "Medley." Playette Guides, "The Fair Blossom" (MS.). Song, a Guide, selected. Story, Uncle Ernest. Comb Band, The Guides, "Medley." Song, The Guides, "Taps" (a Guide song). Story, Uncle Ernest.
 7.0: News session, market reports, and sports results.
 8.0: Chimes of the General Post Office clock, Wellington.

A LITERARY AND OPERATIC EVENING.

- 8.1: Overture—The Orchestra, "Rosamunde" (Schubert).
 8.10: Vocal trio—The Etude Trio, "Angelus" from "Maritana" (Wallace).
 8.13: Instrumental trio—Studio Trio, "Episodes" (Schutt).
 8.23: Soprano solo—Miss Gretta Stark, "Here's to Love and Laughter" from "Sunshine Girl" (Rubens).
 8.27: Grand opera selection—The Orchestra, "Martha" (Flotow).
 8.32: Duet—Messrs. Ray Kemp and Frank Skinner, "Qui Vive" (Planquette).
 8.36: Piano solo—Miss Eileen Amo Bennett, (a) "Prelude Op. 17, No. 4" (Blumenfeld); (b) "Prelude in B Flat Minor, Op. 28, No. 16" (Chopin); (c) "Jeux d'Eau" (Ravel).
 8.44: Tenor solo—Mr. Frank Skinner, "The Faery Song" from "Immortal Hour" (Broughton).
 8.47: Humour—Mr. Frank May, (a) "Father's Joined the Mustard Club" (original); (b) "Our Tom" (original).
 8.54: Instrumental item—The Orchestra, request number.
 9.2: Weather report and announcements.
 9.4: Literary talk—Miss Clodagh Russell, "Keats."
 9.19: Instrumental item—The Orchestra, "Antar" (Rimsky-Korsakov).
 9.31: Baritone solos—Mr. Ray Kemp, (a) "On the Road to Mandalay" (Kipling-Speaks); (b) "Follow Me 'Ome" (Kipling-Higgs).
 9.38: Vocal duet—Misses Gretta Stark and Rita Arnold, "Barcarolle" from "Tales of Hoffman" (Offenbach).
 9.41: Humour—Mr. Frank May, "The Yellow Dog's Love for a Nigger" (original).
 9.46: Vocal quartet—The Etude Quartet, "Soft and Low" from "The Mock Doctor" (Gounod).
 9.49: Contralto solo—Miss Rita Arnold, "Hindoo Song" (Bemberg).
 9.52: Selection—The Orchestra, "Iolanthe" (Sullivan), by request.
 10.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES), FRIDAY, AUGUST 31.

- 3 p.m.: Afternoon session, selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session. Big Brother, stories for the little folks by Big Brother; health game talk by the Captain; birthday greetings; piano music by Cousin Amuri; choruses by "The Young Helpers."
 7.15: News session.
 8.0: Chimes.
 8.1: Overture.
 8.6: Mezzo-contralto and baritone duet, the Dinky Duo in a song cycle, "Songs of Love and Spring" (Lehmann); "Tis Spring!" (Lehmann).
 Baritone solo, "When Young Love Comes Knocking" (Lehmann).
 Contralto solo, "In April Mood" (Lehmann).
 Baritone solo, "Dawning Love" (Lehmann).
 8.16: Violin solos, Miss Irene Morris, (a) "Largetto" (Weber-Kreisler); (b) "Hornpipe" (Mistowski).
 8.22: Contralto solo, "Disturb It Not" (Lehmann).
 Baritone solos, (a) "Golden Bridges" (Lehmann); (b) "A Dream of Violets" (Lehmann).
 Contralto solo, "Star Fancies" (Lehmann).
 Vocal duet, "Love's Emblems" (Lehmann).
 8.32: Instrumental trios, Christchurch Broadcasting Trio, (a) "Andante Con Moto"; (b) "Allegro Scherzando" (Gade).
 8.42: Baritone solo, "My Secret" (Lehmann).
 Contralto solo, "The Sapphire" (Lehmann).
 Vocal duet, "Love Enthroned" (Lehmann).
 8.51: Recital, Mr. Campbell Brown, "The Whitest Man I Know" (MS).
 8.56: Mezzo-soprano solos, Miss Winifred Barrett, (a) "When the Heart is Young" (Buck); (b) "I Hear a Thrush at Eve" (Cadman).
 9.3: Weather forecast.
 9.5: Overture.
 9.9: Tenor solos, Mr. Geo. Fawcett, (a) "The Vagabond" (Williams); (b) "Night" (Strauss).
 9.15: Instrumental trios, Christchurch Broadcasting Trio, (a) "Indian Canzonetta" (Dvorak); (b) "The Mill" (Raff).
 9.22: Mezzo-soprano solos, Miss Winifred Barrett, (a) "Ring Bells, Ring" (Day); (b) "Love's a Merchant" (Carew).
 9.27: Fox-trot, Laughing Saxophone, Mr. George Wilkinson, "I'm Happy" (own arrangement).
 9.31: Tenor solo, Mr. George Fawcett, "I Attempt from Love's Sickness to Flee" (Purcell).
 9.35: Novelty fox-trot, Willyams' Dance Band (Farmyard effects by Mr. S. Morrish), "Log Cabin" (Shannon).
 9.40: Recital, Mr. Campbell Brown, "Mrs. Dougan's Discovery" (Raff).
 9.45: Foxtrot, Willyams' Dance Band, "Cock a Doodle, I'm Off My Noodle" (Sherman) (vocal refrain by Mr. A. E. Willyams).
 Dance music until 11 p.m.
 11.0: God Save the King.



4YA, DUNEDIN (463 METRES), FRIDAY, AUGUST 31.

- 3 p.m.: Town Hall chimes.
 3.1: Gramophone concert.
 3.15: Talk on fashions by Miss Buccleuch of the D.S.A., Ltd.
 3.30: Relay of afternoon tea music from the Savoy.
 3.45: Studio music.
 4.0: Relay of music from the Savoy.
 4.15: Gramophone music.
 4.25: Sports results.
 4.30: Close down.
 6.0: Town Hall chimes.
 6.1: Children's session. Aunt Sheila and Big Brother Bill, Happy Folks Anthem. The entertainment part of the programme will be provided by the brass band of the Catholic Boys' Orphanage (by kind permission of the Rev. Mother Superior). The band will be led by Bandmaster T. Phelan.
 7.15: News session.
 8.0: Town Hall chimes.
 8.2: Orchestral selection.
 8.10: Baritone solos, Mr. L. M. Cachemaille, (a) "Still as the Night" (Bohm); (b) "Ice Bas" (D'Hardelot).
 8.17: Cornet solo, Mr. George Christie, "Inspiration" (Hume).
 8.23: Pianoforte solo, Mrs. Ernest Drake, "Rain in the Garden" (Debussy).
 8.27: Mezzo-soprano solo, Miss Molly Vickers, "Down the Vale" (Muir).
 8.30: Recitals, Miss Madge Yates, (a) "Butterflies"; (b) "The New Man."
 8.38: Baritone solo, Mr. L. M. Cachemaille, "Onward" (Liddle).
 8.41: Cornet solos, Mr. George Christie, (a) "Nirvana" (Adams); (b) "A Farewell" (Liddle).
 8.48: Mezzo-soprano solos, Miss Molly Vickers, (a) "Ye Banks and Braes" (traditional); (b) "Kitty of Coleraine."
 8.55: Recital, Miss Madge Yates, "The Green Bonnet" (Anon.).
 8.59: Weather forecast.
 9.2: An hour's dance music relayed from the Savoy.
 10.2: Close down.

Saturday, September, 1**1YA, AUCKLAND (333 METRES), SATURDAY, SEPTEMBER 1.**

- 2.45 p.m.: Relay description of Rugby football match from Eden Park—Auckland v. North Auckland.
 4.30: Close down.
 6.0: Children's session, conducted by Cinderella, piano solos, Cousin Stella, "Study" (Carroll) and "A Morning Walk" (Swinstead. Story for the tiny tots. Piano solo, Cousin Margery, "To the Moon" (Greig). Letters and birthdays. Jungle stories, Uncle Jack. Piano solo, Cousin Noel, "Study" (Loeschorn), and "Naiad's Rest Call" (Carroll). Bedtime stories.
 7.15: News and market reports. Sports results.
 8.0: Chimes.
 8.1: Relay of orchestral overture from the Prince Edward Theatre. Orchestra under Mr. Ernest Beacham.
 8.11: Vocal quartet, Lyric Quartet, "Russian Lullaby" (arrgd. Crowther).
 8.15: Bass solo, Mr. Ernest Thomas, "Oh, to be a Gipsy" (Foster).
 8.19: Banjo duo, Messrs. Higgott and Morrison, (a) "Intermezzo" (from "Cavalleria Rusticana") (Mascagni); (b) "Sing Me to Sleep" (Greene).
 8.27: Tenor solo, Mr. A. Ripley, "Lay My Head Beneath a Rose" (arrgd. Crowther).
 8.35: Relay of orchestral entr'acte from Prince Edward Theatre.
 8.45: Vocal duet, Messrs. Richards and Thomas, "Song of the Sword" (Gilbert).
 8.50: Humour, Mr. A. McElwain, "Some Humour."
 8.55: Tenor solo, Mr. H. Richards, "The Midshipmate" (Adams).
 8.59: Weather forecast.
 9.0: Banjo duos, Messrs. Higgott and Morrison, (a) "Miserere" (from "Il Trovatore") (Verdi); (b) "To a Miniature" (Brahe); (c) "Friend o' Mine" (Sanderson).
 9.10: Vocal quartet, Lyric Quartet, "In Absence" (Buck).
 9.14: Relay of dance music from Dixieland Cabaret Orchestra under Mr. H. Neilson.
 11.0: God Save the King.

2YA, WELLINGTON (420 METRES), SATURDAY, SEPTEMBER 1.

- 3 p.m.: Chimes of the General Post Office clock, Wellington.
 3.1: Relay description of representative Rugby match, Wellington v. Taranaki.

SUNDAY SCHOOL HYMNARY

The Hymnbook used at the Children's Song Service, 1YA, Auckland.
 Words only 1/- per copy, Music 7/- and 8/6. Postage extra.

AUCKLAND SUNDAY SCHOOL UNION
Box 124 :: AUCKLAND.

- 6.0: Children's session—Aunt Gwen and Uncle Toby, assisted by St. Augustine Petone Boy Scouts, under Mr. Royal Nelson, Drum and Trumpet Band. Birthdays, Aunt Gwen. Investiture of a Scout into the great brotherhood. Birthdays, Uncle Toby. Instrumental trio, three cousins, "Silver Threads Among the Gold." Song, cousin, selected. Recitation, cousin, "The Scout Law." Band, cousins, selected. Pianoforte duet, two cousins, selected. Trumpets, cousins, "Sunset in Camp." Good-night song, Uncle Toby.

- 7.0: News session, market reports, and sports results.
 8.0: Chimes of the General Post Office clock, Wellington.
 8.1: Overture—The Orchestra, "Morning, Noon, and Night" (Suppe).
 8.11: Vocal quartet—Melodie Four, "Honey, I Wants Yer Now" (Coe).
 8.14: Humour—Mr. W. McClellan, "Mrs. Scroggins" (Blascheck).
 8.19: Bass solos—Mr. W. W. Marshall, (a) "Roll On, Thou Dark and Deep Blue Ocean" (Petric); (b) "Dear Voice I Love."
 8.26: Steel guitar duos—Messrs. Berthold and Bent, (a) "Kalima" (Awai); (b) "Southern Blues" (Palakiko).
 8.32: Vocal quartet—Melodie Four, "The Merry Frogs" (Speiser).
 8.38: Instrumental—The Orchestra, "Lightning Switch" (Alford).
 8.43: Topical sketch—The Glad Idlers, "Quarrels" (original).
 8.49: Tenor solo—Mr. F. Bryant, "Rosamond" (Forster).
 8.52: Instrumental—The Orchestra, (a) "In a Bird Store" (Lake); (b) "Independence March" (Hall).
 9.2: Weather forecast.
 9.4: Vocal duet—Messrs. Frank Bryant and R. S. Allwright, "Excelsior" (Balfe).
 9.8: Humour—Mr. W. McClellan, "Trouble in the Singing Pew" (Carter-Platts).
 9.13: Instrumental—The Orchestra, request item.
 9.21: Vocal quartet—Melodie Four, "Ramona" (Wayne).
 9.24: Steel guitar duos—Messrs. Berthold and Bent, (a) "Wallana" (Alan); (b) "Hilo" (Pali).
 9.30: Tenor solos—Mr. Sam. Duncan, (a) "Violets" (Wright); (b) "Macushla" (MacMurrough).
 9.36: Instrumental—The Orchestra, "Madame Pompadour" (Fall).
 9.46: Baritone solos—Mr. R. S. Allwright, (a) "The Arrow and the Song" (Balfe); (b) "Youth" (Allitson).
 9.52: Topical sketch—The Glad Idlers, "Tea Shop Tattle."
 9.58: Vocal quartet—Melodie Four, "Drifting and Dreaming" (Van Alstyne), by request.
 10.1: Instrumental—The Orchestra, dance numbers.
 10.11: Dance programme.
 11.0: God Save the King.

3YA, CHRISTCHURCH (306 METRES), SATURDAY, SEPTEMBER 1.

- 2.45 p.m.: Relay description of Rugby football match from Lancaster Park.
 6.0: Chimes. Children's session, conducted by Uncle Sam. Stories, Uncle Sam, "The Secret Garden" and "Settler of Serpent's Creek." Songs by Cousins Dorothy and Venus. Piano solos by Cousin Jean. Birthday greetings. Good-night song by Cousin Vi, "Hush, Here Comes the Dream Man."
 7.15: News session.
 8.0: Rebroadcast of station 2YA. (Conditions permitting, 3YA will rebroadcast 2YA's evening programme.)
 11.0: Close down.

4YA, DUNEDIN (463 METRES), SATURDAY, SEPTEMBER 1.

- 7.15 p.m.: News session.
 7.30: Address under the auspices of the Worker's Educational Association.
 8.0: Town Hall chimes.
 8.1: Relay of orchestral music from Strand Theatre Orchestra under the direction of Mr. L. D. Austen.
 8.11: Soprano solos, Miss Roma Buss, (a) "Slave Song" (Del Riego); (b) "For You a Rose, For Me a Memory" (Nicholls).
 8.17: Violin solo, Mr. A. R. Watson, "Tempo Di Sarabande" (Geminiani).
 8.21: Vocal quartets, 4YA Harmonists, (a) "Londonderry Air" (Trdtl.); (b) "Cradle Song" (Wheeler).
 8.27: Pianoforte solo, Mrs. Ernest Drake, "The Prince" (Bridge).
 8.33: Baritone solos, Mr. F. M. Tuohy, (a) "Harbour Night Song" (Sanderson); (b) "The Crescent Moon" (Sanderson).
 8.39: Instrumental trios (violin, flute and piano), (a) "Ave Maria" (Gounod); (b) "Alita" (Losey).
 8.45: Mezzo-soprano solos, Miss Mollie Andrews, (a) "I Heard You Singing" (Coates); (b) "I Know a Bank" (Shaw).
 8.51: Flute solo, Mr. J. W. Stewart, "The Japanese Blind Girl's Plaint" (Griffiths).
 8.58: Recital, Miss Roberta Williams, "The Old Stage Queen" (Wilcox).
 9.1: Weather forecast.
 9.3: Orchestral music relayed from Strand Theatre.
 9.13: Tenor solos, Mr. Chas. C. Scott, (a) "My Violet" (Thomson); (b) "Requiem" (Homer).
 9.19: Violin solos, Mr. A. R. Watson, (a) "Gavotte" (Purcell); (b) "Rigandon" (Teleman).
 9.26: Vocal quartet, 4YA Harmonists, "Goodnight, Goodnight, Beloved" (Pinsuti).
 9.30: Recitals, Miss Roberta Williams, (a) "A Lesson in Tennis" (Coburn); (b) "Romance of a Hammock" (Anon).
 9.38: Flute solo, Mr. J. W. Stewart, "Barcarolle" (Duvivier).
 9.42: Tenor solo, Mr. Chas. C. Scott, "O Night of Stars and Splendour" (Thomson).
 9.46: Relay of orchestral music.
 10.0: Close down.

Sunday, September 2

1YA, AUCKLAND (333 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m.: Result of All Blacks match in South Africa.
 3 p.m.: Afternoon session, selected studio items.
 4.0: Literary selection by the announcer.
 4.8: Selected studio items.
 4.30: Close down.
 6.0: Children's song service, conducted by Uncle Leo, assisted by children from Knox Presbyterian Sunday School.
 6.55: Relay of Service from St. Mary's Cathedral. Preacher, Rev. Percival James. Organist, Mr. Edgar Randall.
 8.30: Relay of Auckland Municipal Band concert, military band selections. Conductor, Mr. Christopher Smith.
 9.30: God Save the King.

2YA, WELLINGTON (420 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m.: Result of All Blacks' match in South Africa.
 3 p.m.: Afternoon session—Selected studio items.
 6.0: Children's Sunday service, conducted by Uncle Ernest, assisted by Vivian Street Baptist Church Sunday School Choir.
 7.0: Relay of service from St. Gerard's Redemptorist Church. Choir-master, Mr. F. J. Oakes. Organist, Mr. H. Mount.
 8.15 (approx.): Studio concert by Mr. Len. Barnes.
 God Save the King.

3YA, CHRISTCHURCH (306 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m.: Result of All Blacks match in South Africa.
 3 p.m.: Studio concert, selected studio items.
 4.30: Close down.
 5.30: Children's song service, conducted by Uncle David, assisted by children from Oxford Terrace Baptist Sunday School.
 6.30: Relay of evening service from Linwood Baptist Church, Linwood Avenue. Preacher, Rev. A. W. Stuart, B.A. Organist, Mr. W. E. Wilson. Choirmaster, Mr. S. J. P. Grigg, M.Sc.
 7.45 (approx.): Studio programme of selected items.
 8.15 (approx.): Gramophone recital.
 God Save the King.

4YA, DUNEDIN (463 METRES), SUNDAY, SEPTEMBER 2.

- 9 a.m.: Result of All Blacks match in South Africa.
 5.30: Children's song service, conducted by Big Brother Bill, assisted by children from the Central Mission Methodist Sunday School.
 6.30: Relay of evening service from Knox Church.
 8.0: Studio concert.
 9.15: Close down.

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Two Radio Puzzles

I HAVE had two experiences that appear somewhat unintelligible to me, and an explanation might be of interest to your readers. Firstly, I had a super-heterodyne set and a neutrodyne set alongside of each other. The super-het. was receiving well off the loop only and not grounded, but of course being immediately under the aerial and only a few feet from the lead-in, but in no way connected. The neutrodyne was connected to the aerial, and its own batteries, but no loud-speaker. I found on tuning the neutrodyne (which had no speaker) to the same station that the super-het. was receiving, that the volume of the super-het was considerably increased. Of course I was not satisfied with one trial, but got the same result time after time. I have been at it long enough to know that I was not being deceived by a chance synchronising.

This experience is perhaps more easily explained than my second one, which was as follows:—I had a super-het. set working on aerial and loop but no ground. Suspecting the wet B battery (which was an alkali one) to be at fault, I substituted dry batteries and the set operated faultlessly. I then had the alkali battery standing on the floor at the foot of the console super-het., and got to work with a voltmeter to test it. The battery was connected to nothing. On putting the second terminal of the voltmeter on to a cell in advance of where the first terminal was, the reception of the set was considerably upset—there was a distinct variation, and this happened again and again, as I tested the battery a few cells at a time. Can you elucidate please?—Mostyn Jones (Te Kuiti).

The Phenomenon Explained.

Our contributor M.I.R.E., to whom we submitted this letter, writes:—Mr. Mostyn Jones's first problem is very easily explained. The neutrodyne was connected to the aerial, and the super-heterodyne was not, but the latter was connected to the loudspeaker. Presuming the super-heterodyne to have six valves and the neutrodyne five, the net number of valves in operation between aerial and loudspeaker would be eight, because the first two valves in the neutrodyne would act as radio frequency amplifiers, and this amplified energy would excite the super-heterodyne by virtue of the inductive coupling existing between the two sets, and thus in effect add two radio frequency stages to the super-heterodyne. As a matter of fact, the third valve in the neutrodyne, which under normal circumstances is a detector valve, would act to a certain extent as an amplifier and assist the before-described action somewhat. Had Mr. Jones shifted either of the two sets, an angle would have been found where this coupling arrangement would have had a maximum effect.

With respect to the second set of circumstances, as far as can be judged, this is a freak effect dependent on the fact that a receiver using a loop as a pickup, becomes very much more sensitive if an aerial is attached to the receiver, and the earth left disconnected. The aerial under these circumstances, will impulse the receiver, due to the aerial becoming an aperiodic pickup. If the earth is connected, the aerial takes up a definite time period, and is no longer aperiodic, and the received signals are consequently

materially reduced unless the natural period of the aerial approximates the wave length being received. Presumably, the wet "B" battery described by Mr. Jones as having been located close to the receiver, had a material self-capacity with respect to the receiver and to earth, and increased the coupling between receiver and ground just sufficiently when the self-capacity of his body was also connected to the battery sufficiently to disturb the efficiency of aperiodic action of the aerial.

This latter explanation is purely hypothetical, but as a loop-driven receiver attached to an aerial and not earth, is particularly sensitive to near-by capacity effects, it is not at all an improbable explanation.

Heterodyning of 3YA.

THE Americans are experimenting with simultaneous broadcast from several different stations at the same frequency (or on the same wave length). This has decided advantages in that much duplication of programmes is saved, but it has a disadvantage in that the slightest variation in the number of frequencies sent out by any station cause heterodyning and mushiness.

AN example of heterodyning occurred recently when 3YA had to drop two metres in wave-length (or, more accurately, increase its frequency six kilocycles per sec.) to avoid interference by 2GB. The normal frequency at which 3YA should transmit is 980 kilocycles per sec., while 2GB should transmit at 950 k.c.s, thus leaving a margin of 30 k.c.s.

To heterodyne at the proximity of this wave-length the stations must differ by 5 kilocycles (a note of 5000 frequencies) or less. It is evident, therefore, that one of these stations must be off its wave-length.

Frequent testing at 3YA would indicate that 2GB is at fault, but there is hardly yet time to definitely determine this. If both of these stations were crystal controlled, variation of this dimension would be impossible. Herein lies the value of a crystal controlled transmitter. Without going into details, the principle of this type of oscillator consists in a smooth crystal of definite dimensions, within two metal plates, which are connected to a suitable circuit. This crystal has a natural frequency determined by its physical dimensions. These frequencies are true to within .00001 per cent. Arranged in a circuit, the minimum variation is about .005 per cent., while the maximum is .2 per cent.

IT can thus be seen that were these two stations crystal controlled their maximum variation would be 1.9 k.c. in the case of 2GB, and 1.96 k.c. in case of 3YA, although in practice this variation would be much lower. Compare this with the 25 k.c. variation which has led to heterodyning.

FEW valves die a natural death, at least few of those in the sets of radio enthusiasts. They are either short-circuited, dropped, or have something dropped on them. A simple "valve safe" for valves not in use can be constructed out of a few strips of corrugated cardboard, such as used for wrapping bottles, glued into a suitable box. Valves are more secure there than if left lying on the table or chair.

"Enquirer."—Mr. S. R. Ellis supplies the information you require re 2BE: It is owned and operated by Bird's Electrical Co., Sydney, operating on a wavelength of 326 metres, on Monday and Tuesday only. He logged him on May 1 at 11.30 in the evening. It is hard to separate 3UZ Melbourne and 2BE, as 3UZ is on 319 metres.

2YA Reception.

WHILE on the job with pen and ink I might just as well register my grouse with regard to 2YA. This station comes in very well in daylight, but at night time is very seldom worth listening to, distortion and mushiness being very bad, especially during the last month. I noticed that one of your correspondents blames the receivers used for a lot of the distortion and mushiness experienced by different listeners, but that of course is absurd.—W. B. James (Waipawa).

Our Mail Bag

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

IN forwarding sub. for another year, I must say how interesting your journal is. It covers practically everything in the New Zealand radio world. I have, until now, been one of those many silent listeners, but I might as well have my say. Our best night station is 2YA, with 1YA second. There is no fading or blur with Wellington down here, and plenty of "juice." Our only reliable station during the day is 4YA, but it is hopeless at night. The programmes are quite satisfactory, and, although sometimes they do not

please all, surely there is a wide enough range in four stations.—A.M.B. (Winton).

MY experience here of 2YA's transmission is exactly the same as explained by "Havelock North"—persistent mushing, distortion, fading, etc. I always consider myself lucky if I receive one or two items good out of a programme, and to do this I have to sit beside the set and keep on adjusting the volume control, one minute it simply pours in, and the next minute almost silent. This has been my experience ever since the 2YA station started operation. As a general rule, I get perfect reception from 1YA, and in my humble opinion this is the best New Zealand station.—T.M. (Hokitika).

2ZM, Gisborne.

WE were highly amused with "A.K.'s" letter complaining about 2ZM's broadcasting. "A.K." is apparently the possessor of the most unselective set in this little world of ours, if he cannot tune out 2ZM over his whole condenser dial readings. We would suggest that "A.K." looks for the trouble in his own receiver instead of blaming the man on the other end of the ether wave. The writers, who operate four very home-made sets, have no difficulty in tuning out 2ZM. The broadest tuning does not cover 12 degrees of the condensers. We might mention that no one of us is using a wave trap; it is not necessary with any ordinary set. "A.K." will bless 2ZM in the summer months, when outside transmissions are hard to get. The "youth" who runs 2ZM happens to be one of the pioneers of radio transmission in New Zealand, having taken out his first broadcast license in 1923, and having been a keen experimenter since 1912. Apart from this, his station is famous throughout Australasia for its modulation and freedom from fading.—Four Satisfied Listeners.

In last week's issue we pointed out the unselective nature of "A.K.'s" receiver. We are, therefore, condensing for space reasons letters also received on the lines of the above, from "Satisfied" (Gisborne) and "One Valve" (Gisborne). "Satisfied" says: "Those responsible for 2ZM are to be congratulated on their enterprise, as they supply a long felt want in an isolated district such as this, so enabling owners of small sets to derive much more pleasure from listening." "One Valve" says: "Perhaps 'A.K.' does not realise that the majority of license holders in this district are crystal and single-valve setters, to whom 2ZM's transmitting station comes as a boon and a blessing. 'A.K.' is now the most roundly laughed at man in Gisborne because of his reference to the 'youth' of the operator of 2ZM, since Gisborne knows 2ZM as a sober citizen of middle age, with long years of radio experimentation to his credit; indeed, he is a widely acclaimed authority on both long and short wave transmission and reception, and is in daily receipt of an

endless stream of congratulatory letters from all parts of the Dominion."

High-class Music.

HIGH-CLASS music is a disease or blight which breaks out among people who have given too much study to music. They get so far advanced they must break out somewhere, just like the different schools of painting. People when they complain in this way are asked what music is or what do they call music. Well, I love music, but it must make me feel some emotion to call it really fine, such as joy, sadness, gladness, renunciation, and so on, but not irritation. Now, that's that. We are most enthusiastic about the "Walter Pearce" earth. My son has put ten earths in, and now we can get Japan every night if we wish, and he got two American stations last night, one in Oregon and the other in California, and I got that 100 watt 3UZ, Melbourne, besides several Sydney stations, and I was greatly astounded to get a 51-watt (I think he said) in Dunedin, which came out loud and clear, and a good many more. Wellington is my favourite station. Since the Auckland metres have been altered she is most unreliable.—L. Hill (Manapai).

The Cheapest Ever.

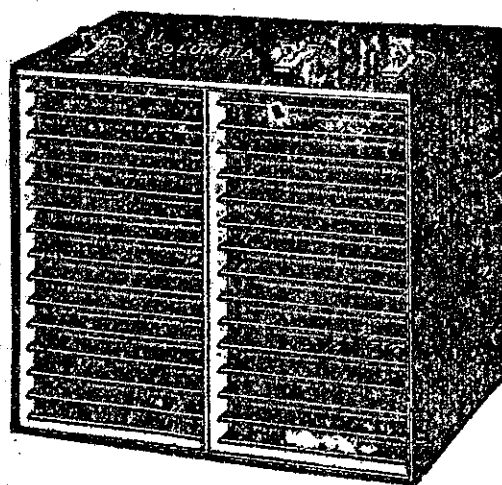
ENCLOSED please find ten shillings annual subscription Radio Record. The cheapest thing ever I bought, and I congratulate you on efforts to further improve same. I should like to suggest that the churches be asked to finish their services on prompt time. It is not fair for those that follow. Perhaps if their attention is drawn to the matter it will be overcome.—J.R. (Wellington).

I MUST protest against the suggestion of A.M.T. in your columns. He must admit that it is grossly unfair to expect the section of the listening-in public that prefer the lighter vein to invest in records and phonograph pick-up; when it is considered that they have paid (I consider) more than half of the broadcast revenue. Sir, more in the lighter vein is absolutely necessary, and I would suggest the plan of having different nights set apart for different tastes. Regarding the playing of jazz by 2YA: well, they can't manage it, and I'd rather have a record or a player piano performing the piece. Personally, I am quite satisfied with the quality of 2YA's transmission, but the only part of the programme that pleases me is the hour of dance music on Saturday night.—H. M. Grinstead (Wanganui).

Mr. Pierce's Earth.

BEING only a late subscriber, I missed the description of Mr. Pierce's earth. Would it be possible for you to publish a description.—M. Winter (Takaka).

[Mr. Pierce's earth was as follows:—The wire that led from the ground connection on the receiver out through the window ended at a binding post on a porcelain base. From this post twelve wires led to the same number of pipes or other pieces of metal embedded in the ground. A leaky automobile radiator was sunk in the ground at the end of the row of pipes, with its caps just above the surface so that water could be poured into it. The ground clamps on the pipes were bright. Mr. Pierce said that he put on new ones every few weeks.—Ed.]



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No Complaints.

I WOULD like to add my word of commendation both of your excellent publication and of the splendid broadcast night by night from the various stations. One reads numbers of letters in the Record and elsewhere condemning the company for this and that, but for my part I have no complaints and merely marvel that with the comparatively small revenue such a high standard of service can be maintained. For the past year's service I would like to say "Thank you" and "No complaints."—H. L. Stone (Ashburton).

The Racing Ban.

I AM one of those out in the bush who have looked forward to race broadcasting, and can only express regret for the many country listeners who have been deprived of this pleasure. I think the conference is making a great mistake as broadcasting goes to make anything popular—music, vocal, sport, news, etc. I have followed racing for years, and when I've had the chance have gone to a meeting. A few of my listener friends had talked of going to Christchurch for the big meeting. I for one am not going now, owing to the results of the conference's decision, and if others took the same view the racing clubs may realise that broadcasting does not deplete their revenue.—K.E.P. (Murchison).

Hubby Speaks Up.

"THE only alteration I would like would be a change of programme occasionally after the Church service on Sunday evenings," wrote a Christchurch lady, in renewing her subscription. The letter was endorsed by "hubby" (who put in the ten bob) with "Yes, cut out Wellington, and give us some of the beautiful stuff to be had on records!"

That 50 Per Cent. Standard.

MAY I say how much we enjoy what comes over the air from your stations. From the announcers down to the youngest cousin we have nothing but praise. I am amazed and ashamed often at the unfair criticism with regard to programmes, etc. One man (a dealer, I presume, by his having four prospective buyers in the house with whom he may yet do a deal), says that 2YA was 50 per cent. rotten the other night. Judging by his remarks one is inclined to think that programmes are not the only things that might be improved on, to say nothing of it from a business point of view. I must say we have very different dealers down this way. It would be interesting to know the kind of programmes some people would like.—"Satisfied" (Timaru).

Notes and Comments

(By "Switch.")

THAT grand opera is wonderfully popular with all classes of the community has been evidenced by the attendances of stage presentations in New Zealand. This gives a very broad hint to compilers of broadcast gramophone sessions.

SUNDAY afternoon sessions are particularly suitable for the inclusion of grand opera records. The writer has met many listeners who would vote for grand opera for the whole programme. At all events a leavening of grand opera would be widely welcomed.

THROUGH the medium of the gramophone records, the world's vocal stars are brought right into the home, by radio, and a diversity of programmes is offered by radio which is quite beyond the pockets of the average gramophone owner.

PERHAPS 2YA, Wellington, could devote a whole evening session to grand opera records which are now abundantly available. The operas would be heard on a vocal, artistic plane, high above the standard of the opera companies which occasionally pass through New Zealand.

A GOOD radio set and loudspeaker will reproduce broadcast gramophone records with incomparably better tone and more realistic acoustical effect than the average high-grade gramophone. Therefore, the broadcasting of grand opera records creates far greater pleasure for listeners who have good radio equipment.

THE testing of some of these smaller stations must cause a deal of amusement among Wellington listeners, judging by the chorus of howling valves which surrounds the

Appreciated by the Blind.

I WISH to let you know how we enjoy radio. My husband is blind, and it's a "Heaven-sent blessing to him." It passes away the time for him better than anything else. He enjoys everything, the old songs, recitations, lectures on the British nation and other countries, etc. The only complaint he has is when there is too much static about and we have to shut it off.—A.W. (Otago).

"wave" of the stations. Anyway, these tests have one gratifying result inasmuch that they attract howling valves away from those stations which are offering real music.

THE Melbourne "Listener-In" says:

"The upshot of the conference between representatives of the Commonwealth Government, the G.P.O. and the 'A' Class stations held in Sydney recently was that the Prime Minister has made an announcement of what appears to be a definite policy under which the Government will take complete control of wireless broadcasting in Australia, with all its privileges and problems. The Australian daily papers have already published some informative and a good deal of speculative detail about the proposals, but it is impossible to say when definite steps will be made to take over 'the plant, equipment and mechanical means of broadcasting.' Meantime the present programmes will be maintained."

A PROSPECTIVE city radio listener asked the writer how many broadcast stations could be heard in Wellington with a good outfit on an average night. The inquirer consented to observe a test. The stations which gave sufficient loudspeaker reception to prove entertaining were:—2YA, Wellington; 1YA, Auckland; 3YA, Christchurch; 4YA, Dunedin; 2BL, Sydney; 2FC, Sydney; 2GB, Sydney; 2UE, Sydney; 3LO, Melbourne; 3AR, Melbourne; 4QG, Brisbane. This made a total of eleven stations which provided good entertainment. As a stunt JOAK and JOHK, Japan, were brought in on the loudspeaker and were worth while if only for the novelty. The Jap music was freakish and soon became monotonous.

WHILE eleven stations were sufficiently loud and clear to afford entertainment, other Australian stations were heard, but owing to regular cycles of intense fading they were not a joy to the musically inclined.

5CL, Adelaide, is weak as compared with previous winters.

THE Japanese stations JOAK, just below the wavelength of 2BL, Sydney, and JOHK, on a corresponding wavelength, compared with that of 4QG, Brisbane, are coming in loudly every evening now. The other night the writer thought he was receiving Japanese grand opera from JOHK. A chorus of Japanese men chanted in unison, unaccompanied by instrumental music, but the occasional tolling of a bell produced a weird effect. Generally the crashing of a tin can accompanies the Japanese choral singing, but the man who customarily beats the tin can was apparently having a night off.

JOAK, Tokio, put on some dainty Japanese soubrette items the other night, or if they were not soubrette items there was a brightness about them suggestive of such. The Jap. girls have strangely shrill voices, but they possess a flexibility which is surprising to us Western barbarians. Both JOAK and JOHK are putting out a tremendous lot of talk stuff. One feels curious as to the nature of the talk. The writer is looking around for some tame Jap. to interpret the Jap. talk from JOAK and JOHK.

A NUMBER of radio enthusiasts were discussing the recent frequency tests by 2YA, Wellington, the other day. One man put the position aptly as follows: "A loudspeaker should be more than a mere musical instrument; it must be all musical instruments in itself. Supposing you were listening to the 2YA orchestra, your loudspeaker should reproduce the tone of each of the twelve instruments faithfully, otherwise the music will be lifeless or distorted. Not only should the loudspeaker reproduce the deepest pitched notes of the double-bass and the shrill pitched notes of the piccolo, but the notes of each should have their characteristic overtones to give the characteristic sound of each instrument. Think it over."

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A COMMON mistake is to test the voltage of batteries when they are idle. The correct method is to test batteries for voltage while they are in actual operation. Some dry "B" batteries show a healthy voltage when they are not connected up to the set, but when the strain of operation is applied the voltage drops considerably.

THE English loudspeaker manufacturers are now taking up the exponential horn, and one of the best-known loudspeaker-making firms in Great Britain is turning out a speaker which incorporates the better points of the exponential horn, and also includes an exclusive sound reflector principle.

A RADIO company with business premises in Adelaide and Melbourne employs its own aeroplane for delivering sets and parts to outlying towns. It is proving a big advertising stunt, although a costly one.

IF, by any freak, a New Zealander hears a little station on 230.6 metres on a Sunday evening he will be listening to 3RI, Melbourne, a ten-watt transmitter which sends out gramophone records on alternate Sunday evenings. 3RI is owned and operated by the Victoria Railways Institute Radio Club, a progressive body with some keen radio enthusiasts. Its limited power is not likely to permit of trans-Tasman reception on a wavelength of 230.6 metres, but freak happenings do occur at times when the ether is inclined that way.

NOTWITHSTANDING the advent of the cone-type loudspeaker, Wellington listeners continue to buy the good old horn-type. A local trader states that he has a regular demand for the English horn-type speaker even after comparative tests with cone-types.

THERE is a rumour that a 20,000 watt water-cooled valve is to be embodied in the transmitter of 7ZL. Word is also going around that 3AR,

Melbourne, is to have a new transmitter with an increase of power. Whether the arrangement by which the Commonwealth Government is to take over all the A class stations will effect the above plans is not indicated.

MR. CHARLES MACLURCAN, the well-known Sydney amateur transmitter, has returned to his home after a lengthy visit to England. He made many friends in Wellington a few years ago when he journeyed to San Francisco by one of the Union Company's mail boats to test the practicability of short-wave communication across the Pacific. Mr. MacLurcan has brought back from England several picked specimens of quartz crystal to control the wavelength of his private transmitter.

NEW Zealanders are beginning to sit up and take notice of television, but in its present crude form the thing is best left alone. Careful and competent observers state that television will not be probable in this part of the world for another six years. The only receiving equipment that has proved anything like efficient costs too much for the private individual, and the whole outfit may have to be scrapped at any time in the light of radical improvements probable from time to time.

RADIO engineers in Australia have been endeavouring to work out a scheme by which Kingsford Smith and his comrades would be able to transmit a spoken account of their flight to New Zealand while they are crossing the Tasman. The weight of a transmitter suitable for speech is the main obstacle. If the thing could be managed it would add tremendously to the interest in the flight, as 2YA, Wellington, could pick up and rebroadcast the words spoken from the airplane.

"J.N.T." (Wellington) asks: "Which do you advise as the most suitable for adding to my crystal set for reception of 3YA, Christchurch, one stage of audio or one stage of radio

frequency amplification" Radio frequency is necessary for long-distance reception with a crystal set. One stage of radio frequency amplification should give crystal reception of 3YA, Christchurch, providing the aerial and earth system is good, and the correct type of valve and circuit are used. The location of the listener's aerial is frequently an important factor also.

The many up-country listeners who get the long-distance stations is a revelation to city dwellers. For example, Mr. Claude P. Grey, of Shannon, brought in 2FC, Sydney, on a recent morning at 8.30 o'clock, New Zealand time, with full loudspeaker volume. At 11 a.m. he had the small Wanganui station coming in with tremendous vim. Mr. Grey is still operating his five-valve (dull emitters) American-built set, with which he has long since established a reputation for DX work.

THOSE listeners who tuned in 2FC and 2BL, Sydney, on Tuesday evening of last week had the pleasure of hearing Dame Nellie Melba in "La Boheme" at Her Majesty's Theatre, Sydney. Certain areas in Wellington happened to be affected by a power-line leakage which completely overwhelmed 2BL, Sydney, but it acted only as a "background" to 2FC, and consequently the diva's glorious voice was heard without any serious interference from the latter station.

NEWS of new "wonder" valves is always read with alacrity by broadcast listeners. A Continental valve manufacturing company's latest product, a power valve with an amplification factor of 100 without distortion, has made its appearance in Wellington. It has three grids, and is designed expressly for the last stage of audio. No change in the wiring of a standard receiving set is necessary for the new valve. All that is required is to run an extra wire from the plus terminal of B battery to a screw connection provided on the side of the base of the valve. The B battery potential required ranges from 50 to 150 volts. The filament current is .15 amps at 4 volts. The valve will be available shortly for 6 volts.

THE little "C" battery which is essential for good production of tone in all sets employing audio amplification has a wonderfully long life as there is no current drain from it. A Wellington listener has had a "C" battery in operation for 13 months which is still functioning adequately. It shows only a fractional drop in voltage as compared with its condition when purchased. All dry batteries, whether "A," "B" or "C" will "die" even without being used, while lying idle. Some have much longer lives than others, and it is difficult to assess the "shelf life" of a battery.

A mystery of the ether is its strange lack of conductivity on some occasions, and this gives rise to considerable anxiety as to the efficiency of their sets

on the part of beginners. On a recent Sunday night the Australian stations were not audible at all in some areas in New Zealand, while in more favoured localities they were a mere whisper from loudspeakers. As is usually the case, beginners blamed their valves, batteries, aerials, and what-not for the falling-off of the Australian stations. Some even pulled their equipment apart to test the parts. The nearest telephone should be sought to communicate with a fellow-listener in order to ascertain whether he is experiencing similar results.

THE present winter has been abnormally poor for long-distance reception, although there has been comparatively little interference from static. Some of the old-timers will remember winters which afforded as much as three times the volume which has been obtainable lately from the Australian stations. A peculiar feature of the recent weakness of the Australian stations is that each is affected differently on succeeding nights. 4QG, Brisbane, may be easily the loudest on some nights, while on other nights 2BL or 2FC, Sydney, will be in the ascendant. Then, again, 3LO, Melbourne, will sometimes show a marked improvement, while the Sydney and Brisbane stations are weaker than usual.

THOSE who operate crystal sets will find that the volume of reception can be increased or decreased by the amount of pressure applied by the cat-whisker to some crystals. A little experimentation will prove interesting and may improve reception.



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Testing Audio Transformers

MANY queries that are sent in dealing with sets that have gone "dead," or nearly so, point to breakdown in audio transformer windings as being the cause of the trouble. It is quite a simple matter to ascertain whether a transformer is in good order or not, though many listeners do not appear to know how it is done. Every owner of a receiver should either make a special testing piece or be able to put it together for use at any time.

The only requirements are a pair of headphones, one dry-cell of $1\frac{1}{2}$ volts, which can be a "dud" that has done service on filaments or grid-bias, so long as it shows not much less than one volt. A couple of yards of flexible wire.

IF an old pair of 'phones can be set aside for the purpose, a small flashlight cell can be attached on top of the headband and put in series with the 'phones, ready for use at any time. Otherwise the cell can be kept ready with connecting wires and clips or terminals, to which a pair of 'phones can be quickly attached. This tester is useful not only for transformers, but for testing any other part of the circuit where lack of continuity is suspected.

In whatever form the tester is put together, it is simply the cell connected in series with the headphones with two loose, flexible leads that can be applied to any parts to be tested.

Testing a Transformer.

THE breakdown of a transformer is sometimes a puzzling occurrence, for although a break in the primary will probably cause a complete stoppage of signals, a break in the secondary may only cause weak signals or distortion. With a break in the secondary, no grid bias is applied to the grid of the valve, so that distortion and blocking are likely to occur.

In the case of the first audio transformer, if the input to the grid of the valve is small, this distortion might not be noticed for some time. It is quite possible to receive weak signals from the local station with a break in either a transformer or resistance amplifier, and this should be a hint to apply the test to either.

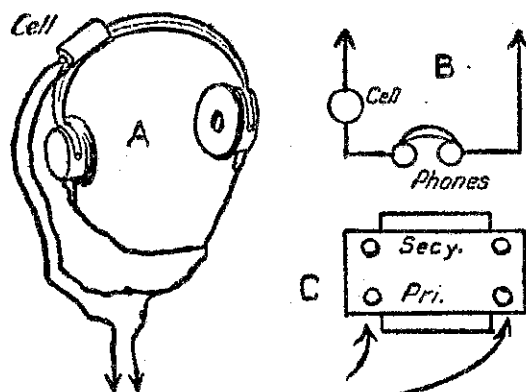
SOMETIMES the break in a transformer is only partial, and in such a case reception will be varying in strength or intermittent, and noisy. Crackles like violent static will probably be heard.

At the same time it must be remembered that such crackling can be caused by defective joints in wiring, or by a dry B battery that has become "bone dry."

Connecting wires should be taken off transformers for the purposes of testing. First apply the two free ends of the tester (shown as arrowheads in the diagrams) to the two primary terminals of the transformer. A click should be heard in the 'phones that is not quite as loud as that heard when the two free ends are touched together. If this is so, the winding is

intact. If the winding is broken, a very minute click will probably be heard, which is the broken winding receiving a charge from the battery just in the same way as a condenser can be charged. The secondary winding is tested in the same way. The click that indicates continuity may not be quite as loud as that from the primary, but it should be distinct. If extremely faint, the same indications apply as above.

Some listeners may be puzzled to know which are the primary and secondary connections of a transformer. The two primaries may be marked 1P,



2P; P and B positive, or P and HT. The two secondary terminals may be marked 1S, OS; G, GB, or G and F.

ANOTHER test to show that the transformer is functioning correctly is to connect the 'phones alone across the secondary, place them on the head, then connect the dry cell across the primary, making and breaking contact. Good loud indications heard in the 'phones indicate that all is in order.

Suspected joints or connections in any part of the circuit are tested by applying the tester to each side of the joint—loud clicks indicate good contact. No clicks indicate that resoldering is required.

Fixed condensers are tested for breakdown in the same way, if of small capacity.

Moving-Coil Speakers.

THIS type of speaker has up to now been very little in evidence in New Zealand, owing to the fact that neither complete speakers or the necessary castings have been imported. To keep readers well posted in the matter, an article is being prepared for next week, giving a full description of the principle involved and general construction.

An A.C. Screen Grid.

A SCREEN grid valve for a.c. operation as now appeared in America. It differs little in appearance from the familiar 222, except that a cathode heater is included, and the outer screen is a square mesh of wire instead of a spiral coil. The ordinary four-prong UX base is used, the cathode being connected to the A positive terminal, thus obviating the necessity for a fifth prong.

Battery Potential on Crystal

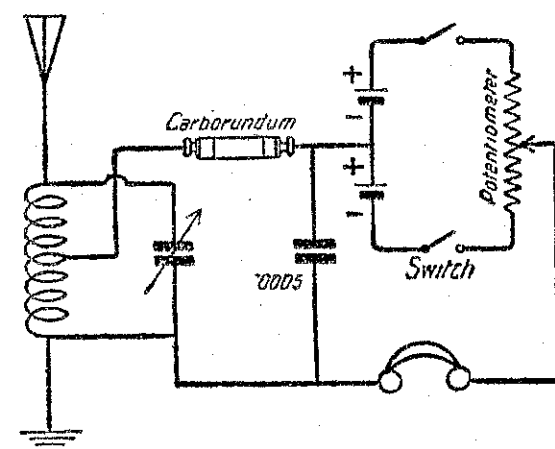
READERS often inquire as to the method of applying battery potential to the carborundum crystal. If the biasing voltage is carefully applied to the crystal and properly adjusted, results exceeding those of the ordinary perikon detector may be gained. (A perikon detector is usually zincite in combination with copper pyrites, hornite, or other crystal.) When a biasing voltage is applied there is a critical point where the strength of signals increases in greater proportion than the applied voltage. In all other crystal combinations the increase in signals is only in direct proportion to the applied voltage. In the case of both there are definite limits above which increase of applied voltage will produce no benefit.

THE usual method of applying voltage to a carborundum-steel combination, such as those obtainable in cartridge form, is shown in the diagram.

The ordinary tuning circuit is shown at the left, the crystal in this case being shown connected to a tap on the tuning coil, but may be connected to the aerial end if found an advantage. The circuit is tuned by a .0005 variable condenser with about 56 turns on the coil, or .00025 with about 78 turns, the wire being better spaced about half its own thickness. The diameter of coils is 3 inches. The foregoing particulars are given for those who wish to construct a complete receiver, but any existing crystal receiver may have the

carborundum cartridge put in and the biasing arrangement added.

THE biasing is accomplished by means of a potentiometer of 400 ohms resistance. The arm is connected to one side of the 'phones, and the two other contacts to the negative and positive, respectively, of two small flashlight dry cells. A connection is taken from between the two cells to one end of the crystal and to a fixed

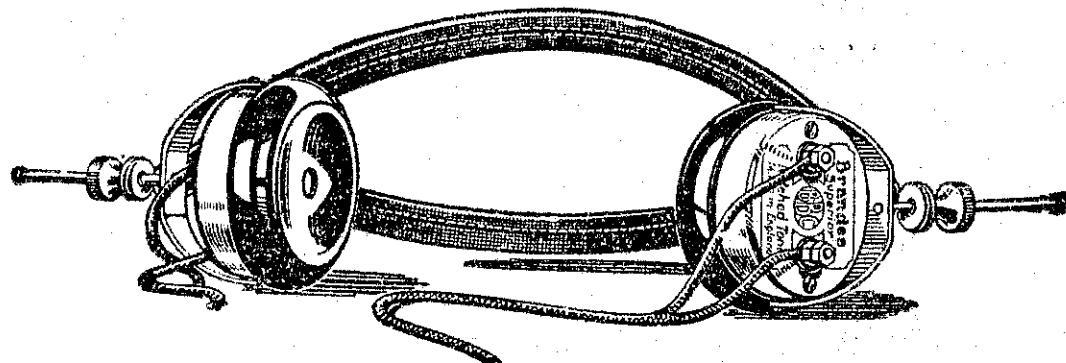


condenser of .0005 capacity, which functions as a by-pass. A switch should be provided for each battery as shown, and this may conveniently be a double-pole single throw, so that both are switched off together when not in use. It is immaterial which end of the detector is connected to the central point of the battery, as the potentiometer allows the application of a voltage of positive or negative from 0 to $1\frac{1}{2}$ volts.

If one cell is omitted its position is bridged over with wire, and it is then

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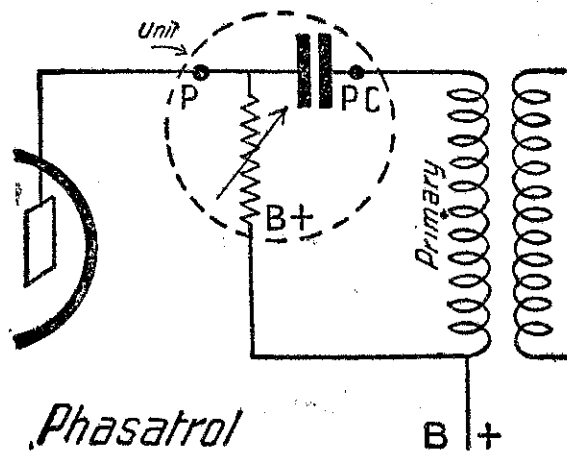


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necessary to find out the correct position of the detector by reversing it. Only one side of the switch would then be required.

Complete units comprising the crys-



tal, potentiometer, by-pass condenser, and dry cell can be purchased at the dealers.

Notes on the Frequency Test

IN the past two issues the writer has pointed out in a general way how constructors may get upon the track of lost tones, high or low, in their receivers. At the same time, one or two other matters connected with good reproduction were mentioned because they are the subject of many inquiries by correspondence. Quality reproduction is what we are all striving after, and whilst improvements are being made with a special object in view, very frequently improvements can be made simultaneously in another direction.

Special note should be made of the fact that the loudspeaker is not always to blame, and before it is changed the receiver itself should come under careful scrutiny. As a rule, the chief causes of lost or under-amplified notes will be found in the audio system, including sometimes the speaker.

Judgment of quality and tone depends very much upon one's musical ear, so that there is room for very wide divergence of opinion between two persons, apart from individual preference for certain types of music. Very fine reproduction is possible, but not always easy of attainment. Nevertheless it should be the aim of every constructor to continually alter and improve the receiver with a view to approaching nearer the goal.

Judge carefully the sound of music and speech delivered by the loudspeaker. Is it free from "wooliness," tinny, or raspy tone, and are all frequencies from the highest violin and cornet notes to the deep notes of the pipe-organ naturally and pleasingly reproduced? Hearing reproduction from other receivers, that is, good ones, is a help as hearing a receiver with a tone and range better than one's own, at once supplies a standard to aim at for the meanwhile, and the higher that standard the better.

Helpful hints on the subject will be continually published, and at an early date it is hoped that particulars will be published of a high quality amplifier.

Charger Transformers.

WHEN making transformers for battery charging purposes an essential point is the tight packing of laminations. Any looseness will make itself heard by an objectionable "rattle" or rough hum, which may cause a suspicion that something more serious is amiss. A liberal coating of shellac on the laminations fulfils two useful purposes: firstly, the prevention of eddy currents in the core, and secondly the deadening of mechanical rattle. Correct arrangement of the clamps and tightening screws will do the rest, provided the laminations are carefully packed tight inside the spool containing the windings.

Tinfoil Fuses.

A CORRESPONDENT who has used tinfoil fuses for some time calls attention to the fact that some cigarettes are packed in foil that is not suitable for fuses. The sample enclosed is of a hard, "rattly" type, resembling aluminium, with embossed striped pattern. Constructors making this type of fuse should see that they use the soft, or real tin or lead type of foil.

Indexing Constructional Articles.

AS soon as time permits, an index to the main constructional articles, etc., will be printed in the "Record" to facilitate looking up back numbers.

A Useful Catalogue.

FROM Wiseman's, Limited, Auckland, a well-printed catalogue has been received. The well-known Atwater-Kent receivers are listed and described. A description of the New Zealand-built "Courier" sets deals with receivers from one valve up, including a 4-valve high and low wave. A general list of components, eliminators, chargers and sundries completes the catalogue, which intending purchasers would do well to obtain.

B Battery Resistance.

AN old, run-down 80-volt B battery may have an internal d.c. resistance of over 1000 ohms compared to 4 ohms for a new battery. No wonder an old battery can cause unsatisfactory reception. The d.c. resistance of a B accumulator is almost negligible, though the a.c. resistance may not necessarily be so. The advantage is that it remains fairly constant.

Noisy Reception.

IF reception is marred by crackles and noise, and the set is suspected, disconnect the aerial, and if the noises are still present, the receiver is the culprit. To test for faulty connections or loose joints, pound the table with the fist, lightly, and listen. If the noise is affected, carefully touch around the internal wiring points, wobble the valves in their sockets, listening all the time. This will locate bad connections. Clean valve legs with glass-paper occasionally. If the trouble is not located, it may be caused by the batteries, broken-down audio transformer winding, or numerous other things.

Insulated Wire Supplies.

LARGE stocks of insulated wire for radio and electrical purposes are carried by the Lawrence and Hanson Electrical Co., Ltd., 35 Lower Cuba Street, Wellington. The firm also specialise in the well-known Sterling loudspeakers several patterns, including the popular "Baby Sterling."

Tips and Jottings

Short-Wave Tuning.

LISTENERS who find difficulty in tuning their short-wave sets can make matters easier by using a dial of higher ratio than that at present in use. A variable condenser of .0001 capacity is often used to facilitate tuning, but if substituted for one of larger capacity would alter the number of turns required on tuning-coils, and would also necessitate an extra coil or two.

Audio Volume Control.

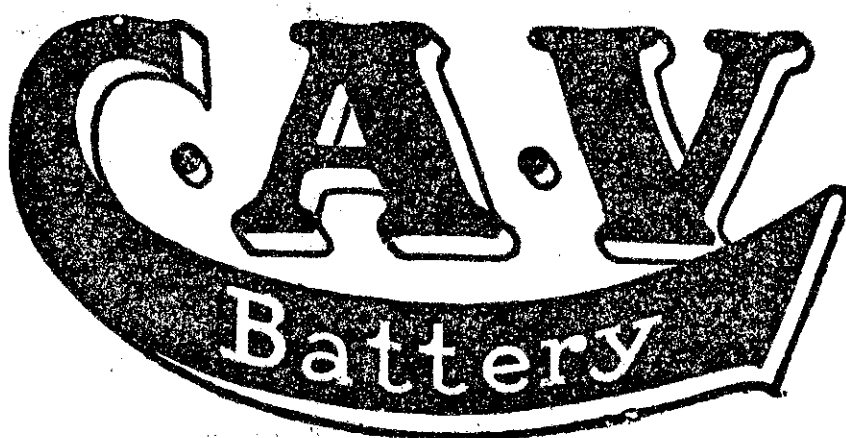
CONTROL of volume by means of a variable resistance across the speaker leads or any part of the audio system is very unsuitable for a receiver capable of giving good volume. If signals increase, the detector is overloaded, and distortion occurs, and no amount of reduction by shunting the audio output will remedy matters. The R.F. filaments are the only ones to use for volume control, and they should not be dimmed too near the point where distortion begins.

Request for Reflex Circuit.

A CORRESPONDENT sends in a request for articles on the crystal-reflex type of receiver. As a general rule this type of circuit is not a success for home construction, and was developed when valves were £2 each, on the score of economy. Greater satisfaction will be gained by commencing with a couple of valves than with one valve and a crystal.

"Improving" Factory-built Set.

A CORRESPONDENT signing himself "Distance-getting," has a six-valve set with six 201A's in the sockets, and asks how reception can be improved. A power-valve could be placed in the last audio stage, a B605 being recommended for this particular set. The radio frequency valves should be kept as at present, as a different type of valve requires re-neutralisation of the receiver. Many factory-built sets can be improved by adding a power-valve and also by putting in better audio transformers, but beyond this it is just as well for the average listener to let well alone.



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Glossary of Wireless Terms

From week to week we give here a section of the glossary of wireless terms from the "Listener's Guide."

HIGH FREQUENCY RESISTANCE.

—The resistance which a conducting path offers to high-frequency currents. Skin effect renders this higher than the resistance that would be offered by the same path to a continuous or low-frequency current.

Skin effect refers to the property of H.F. currents of flowing on the outer edges of a conductor and not penetrating to the core. The higher the frequency the less the penetration.

HIGH-TENSION (H.T.) OR "B" BATTERY.—The battery which supplies the current flowing from the plate to the filament in a radio valve. See B battery.

HONEYCOMB COIL.—A type of multilayer coil in which the lattice formation of the successive layers suggests the honeycomb. See "Duo-lateral Coil."

HOOK-UP. An Americanism for "circuit."

HOT-WIRE AMMETER.—An instrument used in radio transmission work which measures current in amperes by means of a wire expanding in proportion to the heat generated by the passing current. As the wire alters in length it pulls a pointer round a graduated scale against a spring. This type of meter will read either direct, alternating, or oscillating currents, with average accuracy. If specially calibrated for one type of current or frequency, it is quite accurate.

General abbreviation, "H.W.A."

HYGROSCOPIC.—Susceptible to the accumulation of moisture, such as condensation from the breath.

IMPEDANCE.—The total opposition offered by a circuit, or piece of apparatus, to a varying or alternating current, being made up of the combined effects of resistance and reactance. See "Inductance."

IMPULSIVE CURRENT.—A current which flows in a given direction, but varies in quantity at either a radio or an audio-frequency. Such a current flows from the B battery of a radio set.

INDEPENDENT HETERODYNE.—A separate apparatus solely to generate local oscillations for the reception of continuous wave telegraphy. See "Heterodyne."

INDOOR AERIAL.—Considerable efficiency can be obtained with a well-designed, well-insulated, indoor aerial and a standard earth, and it is much to be preferred to a frame for normal reception if a full-sized outdoor aerial is not possible.

INDUCTANCE.—When an oscillating or alternating current is passed through a coil of wire, opposition is offered to its flow by virtue of the magnetic effect of the current. This opposition is measured in terms of impedance, and the two factors determining impedance are inductance and resistance. Resistance has been explained elsewhere. The inductance (or self-inductance as it is generally called) becomes the greater, the larger the number of turns or the greater the diameter of the turns. If an iron core is introduced into the winding, the inductance increases hundreds of times in value, because of the increased magnetic effect. In actual terms of measurement, self-inductance is known as "re-actance."

INDUCTION.—The production of an electromotive force in an electric circuit through the agency of another circuit, without any direct electrical connection between the two. Induction may be brought about by lines of electric force (electro-static magnetic induction). Upon the latter depends the working of the transformer, certain tuning coils, and the loose coupler.

INDUCTION COIL.—A piece of apparatus for producing high-voltage or practically-speaking unidirectional currents from a low voltage direct current supply. It is largely used for producing the spark discharge on ships' "emergency" transmitting sets and small land spark stations.

INTERACTION.—May be deliberate or accidental. Ordinary reaction is interference, and if carefully used is beneficial. In a badly-designed set, or with badly-designed parts, there may be interaction between two low-frequency transformers, between two coils which should be isolated or even between actual leads in the wiring, which are not sufficiently widely separated.

RADIO DIRECTORY

What to Buy and Where

AUCKLAND

- ATWATER-KENT RADIO** .. Frank Wiseman, Ltd.
170-172 Queen Street, Auckland.
- ALTONA & HAMMARLUND-ROBERTS SETS.** Johns, Ltd.
Chancery Street, Auckland.
- AMPLION LOUDSPEAKERS** . All Radio Dealers.
- BREMER-TULLY RADIO** . Superadio, Ltd.,
147 Queen Street, Auckland.
- BURGESS RADIO BATTERIES,** All Radio Dealers.
- CE-CO VALVES** . All Radio Dealers.
- FADA RADIO** National Electric and Engineering Co., Ltd., and Radio Supplies.
251 Symonds Street, Auckland.
- FEDERAL, MOHAWK, GLOBE** Federal Radio House,
8 Darby Street, Auckland.
- FERRANTI RADIO COMPONENTS** A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.
- GILFILLAN AND KELLOGG** . Harrington's, Ltd.,
138-140 Queen Street, Auckland.
- GREBE RADIO** Howie's,
Dilworth Building, Custom st., Auckland.
- MARCONI ECONOMY VALVES** All Radio Dealers.
- MULLARD VALVES** All Radio Dealers.
- RADIOLA RECEIVERS** Farmers' Trading Co., Ltd.,
Hobson Street, Auckland.
- RADIOTRON VALVES** All Radio Dealers.
- RELIANCE BATTERIES** . N.Z. Made Reliance Battery Mfg. Co., Ltd.,
96 Albert Street, Auckland.
- T.C.C. CONDENSERS** . A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.

COUNTRY TOWNS

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

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See the diagrams on pages 27 and 30 in last week's "Radio Record" and you will then know why a linen-diaphragm speaker is ideal for your set. The linen-diaphragm or "Air-Chrome" speaker gives the most brilliant and life-like reproduction obtainable from the shrill piccolo down to the rumbling tympani, without the slightest trace of muffling or blasting at the greatest volume.

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"MIKE" INVENTOR

JUBILEE OF INTRODUCTION

THE fiftieth anniversary of the birth of the microphone, the invention that made possible radio broadcasting, finds "Mike," as it is now familiarly called, at last given popular recognition as one of the really great inventions contributing to human happiness.

For more than forty years, while recognised by scientists as the essential fact in telephone transmission, the public at large knew nothing about the microphone and cared less. But to-day more than 20,000,000 radio "fans" know that it is the microphone that transmits to them their daily dozen from the air. For without "Mike" there is no broadcasting.

Over fifty years ago, on April 14, 1877, Emile Berliner, a young German immigrant, living in America, unable to speak pure English, filed his application for a patent on the microphone. His first crude instrument, constructed from a small toy drum, a steel dress button, and a needle, had actually talked. The microphone of to-day, as used both in the telephone transmitter and in radio broadcasting, is merely a refinement of the loose contact principle applied by Berliner with his toy drum, dress stud, and needle.

While the use of his microphone by telephone companies made Berliner rich—and multiplied conversation in these United States many fold—it is in its application to radio broadcasting that the inventor finds his greatest pride. Particularly is he proud of the fact that the microphone is making America a nation of music lovers.

"MUSIC," he declares, "is one of the finest of mental and spiritual foods. If the mind is pleasurable exercised by the harmonious vibrations of song, dance, and rhythm, stirring marches and inspiring overtures, freer circulation, better health, greater activity, and more smiles will be the result in our daily lives."

"That this is being brought about through the broadcasting of musical masterpieces by great artists, there can be no doubt. Men like Atwater Kent for instance, who have made it their aim to project good music into our homes, must be classed as benefactors. They are not merely giving pleasure to the millions who listen in; they are giving inspiration, morale, and a better attitude toward life generally."

Although Berliner also is the father of the disc talking machine, it is his oldest child "Mike" that is his chief pride. And Berliner, at 75, believes the "Mike" is just in his adolescence. The next century, he believes, will see "Mike's" usefulness extended into other fields now no more foreseen than radio broadcasting was half a century ago.



This is Peterkin, of 3YA, Christchurch, whose kindly personality has become a feature of the children's sessions within recent months. Peterkin differs from most of New Zealand's "uncles" in that the stories he reads to his nephews and nieces are all of his own composition. Peterkin is rapidly becoming known as a writer of thrilling stories for boys. His serials in "The Weekly Press" of Christchurch have won the approval of young readers, and his present plans are for the conquest of a wider field.

NEW YANKEE CIRCUIT

FROM time to time new receiving circuits are brought out by the American manufacturers. The latest circuit brought out by a Yankee concern may be technically described as a combination of a one-control tuned, valveless band-pass filter, coupled with a startling new development in an untuned, or rather self-tuning, five valve radio frequency amplifier, which in turn passes the energy to a heavy duty detector and conventional audio frequency amplifier.

Advantages claimed for the new circuit are that it delivers full and equal sensitivity and selectivity on the short as well as long waves; that it does not "chop off the side bands," or, in layman terms, distort the received sound by reason of its ultra sharp selectivity, and that the radically new departure in radio frequency amplification which it employs gives approximately double the yield from the equivalent high class set of the "tuned radio frequency" class.

"We can reduce 75 per cent. of the congestion in the 'scrap heap' section of the broadcasting channels below 300 metres, where 500 of the country's 700 broadcasters have been assigned at present," said the manufacturer's president.

The smaller models of the sets employing the new circuit use seven radio valves. De luxe models use nine. The circuit is obtainable in both "A.C." or alternating current type, as well as battery type sets.

Another advantage claimed for the circuit, viewing it from the manufacturers' standpoint, is that it has no conflict with the Alexanderson patent, a very valuable franchise for which many independent radio manufacturers necessarily pay heavy royalties to the Radio Corporation of America.

In addition, no "balancing" methods are employed and not one grid leak is used in the circuit.

NEPHEWS IN FIJI

WHOLE SCHOOL JOINS 2YA RADIO FAMILY

MR. D. SAUNDERS, headmaster of Provincial School, Eastern Londen, Fiji, writes the following interesting letter to 2YA:—

"You will be surprised to hear that you have 100 new nephews at a Fijian boys' boarding school in the backblocks of Fiji. From the proceeds of a recent bazaar we had here we have invested in an eight-valve super-hetrodyne set. The first night we listened in the first thing we picked up was 2YA children's hour, which the boys enjoyed thoroughly. The reception was quite good, although the station is inclined to fade away a little at times, but at no time were we unable to hear it. We picked up the riddle, 'We all make his praise,' and the boys send the following solution: 'William Shakespeare,' as the celebrated Englishman.

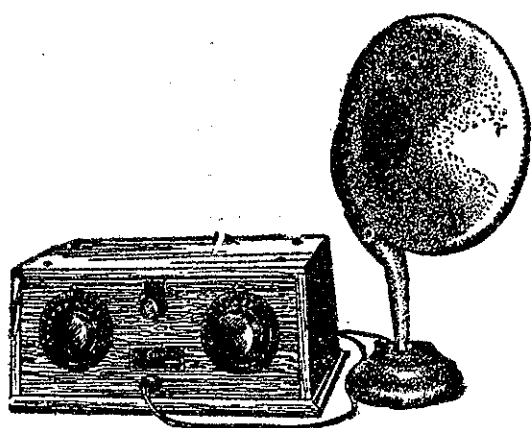
"Being a New Zealand teacher serving a term in Fiji, I am naturally interested in tuning-in New Zealand stations, and we hope that on next Monday week when we listen-in we shall hear a few words from you for our benefit. I have a little daughter, Eileen, who is a keen listener to bedtime stories, and I am sure she would be delighted to hear her name mentioned over the air. It would come as a great surprise to her. The Fijian boys, too, are hard to convince that the stories come from so far away. Perhaps if you had time to say a few words it would be most convincing to them."

ONE UNCLE TO ANOTHER

UNCLE JEFF and Aunt Gwen, of 2YA, have received the following letter:—"Dear Whoveryouare,—I followed your session to-night. Your juvenile chorus was quite nice, and your own patter and stories came over very naturally. You are quite likely overburdened with compliments, so I do not presume you need or are in want of encouragement, but as your breezy session was just as I like it, I thought I would go the length of a penny stamp to pass on the compliments of a plain and unadorned.—Uncle Tom, 1YA."

ONE likes to record enterprise and ingenuity on the part of our own radio dealers. A Wellington man is manufacturing two-stage audio-frequency amplifiers, for use only with crystal sets, of a type which obtains its A, B, and C voltage supply from the household lighting mains. All one has to do is to plug into the lighting socket and the amplifier operates without any batteries at all. High-class audio transformers are embodied in the outfit, and with a crystal detector the tone is a veritable delight, and the volume ample. The outfit is being re-tailed at about £6.

The COURIER Three



**Employs
no
troublesome
Plug-in
Coils**

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The "Courier" 3-Valve employs no plug-in coils. It is the simplest of sets to manipulate, and is in every way a thoroughly reliable and efficient set. The "Courier" 3-Valve, like all "Courier" sets, is fully guaranteed. Price £19/5/-

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complete;

The
Courier
"Brings tidings from afar."

★ COUPON/

Mystery Night Programme

[WEDNESDAY, AUGUST 29]

1YA £50 Prize Competition

No.	Time.	ITEM and COMPOSER.
1	8.1	"Light Cavalry Overture" Suppo
2	8.5	"Toreador Song" (from "Carmen") Bizet
3	8.9	"The Moon Has Raised." Benedict
4	8.13	"The Farewell." Hartmann
5	8.17	"Scenes That Are Brightest." Wallace
6	8.20	"April Morn." Batten
7	8.23	"Serenade." Toselli
8	8.28	"Softly Beams The Light" (from "Don Pasquale") Donizetti
9	8.31	Selected Item.
10	8.42	"Villanelle" ("Oft' have I seen the swift swallow.") Eva Dell 'Acqua
11	8.46	"The Forester" Sterling
12	8.51	"Wailana" (Traditional.)
13	8.54	"Kailima" (Traditional.)
14	8.57	"O Del Mio Dolve Ardor." Gluck
15	9.0	"What Shall I Do?" Purcell
16	9.3	"Dream Kisses." Jerome
17	9.6	"Softly Awakes My Heart." Saint Saens.
18	9.10	"Ramona." Wayne
	9.13	Weather Forecast...
19	9.14	Selected Items.
20	9.19	"False Fickle-hearted Mimi" (from "La Boheme") Puccini
21	9.23	"Which is Which?"
22	9.33	"Ma Curly Headed Babby." Clutsam
23	9.37	"Southern Skies." Preston and McLeod
24	9.41	"Brian of Glenaar." Bullard
25	9.45	"Look Down, Dear Eyes." Fisher
26	9.49	"Hawaiian Airs" (Medley Waltz).
27	9.53	Selected Items.
28	10.3	"La Paloma." Yradler and Millard
29	10.7	"Hanalei Bay." Alohihea
30	10.11	"Diane." Pollock
31	10.14	"Itching Fingers." Smeck
32	10.18	"Can You Imagine It?" Western
33	10.21	"Parted From Thee." Gounod
34	10.25	"On With the Motley" (from "Pagliacci.") Leoncavallo
35	10.29	"Hush Thee, My Baby." Sullivan
36	10.32	"Funiculi-Funicula." Denza
	10.36	Close Down.

ARTIST and CLASSIFICATION.

RULES AND CONDITIONS :

Competitors are required to fill in the column headed "Artist and Classification." Against each of the 36 items should be placed the name of the artist (or artists), with their voices (soprano, tenor, etc.), or the kind of instrument being played. In the case of records, the information supplied should state "Record," with the addition of the kind of voice or instrument. If the space on the coupon is inadequate, competitors can re-write. The coupon is published as a guide, and its use for this purpose is not compulsory. It, however, must be sent in with entry, duly signed.

COUPON.

Name

Address

License No.

Conditions to be Noted.

- 1.—The name of the item will be announced, and listeners are invited to supply the NAME and CLASSIFICATION of the performer, such details to be written against the title of the item, under the above headings.
- 2.—All entries must bear the Post Office date stamp of "August 30th," and be posted to "Mystery Night," 1YA, Auckland.
- 3.—All entries must be accompanied by a Coupon taken from any of the Auckland city papers, the "Pictorial News" or the "Radio Record."
- 4.—In the event of two or more persons giving the same number of artists' names and classifications, the prize will be awarded to the competitor whose coupon is accompanied by the most interesting comments, not exceeding 50 words.
- 5.—The award will be made by the 1YA Musical and Dramatic Committee, whose decision will be final.
- 6.—Sign name and address clearly and give license number.

MR. F. W. SELLENS, Northland, writes:—

A report of reception of the "Palmolive Hour" each Saturday from 2XAD through WGY sent to the Palmolive-Peet Company, Chicago, was replied to by the last U.S.A. mail. They state that at the present time they are broadcasting through a chain of 32 stations throughout the United States, and WGY is a part of this hook-up. Until October 1 their programme is receivable here each Thursday from 1 till 2 p.m., and from that date from 2 till 3 p.m. (This is the change from daylight-saving time to standard time.) They also advise me that to date I am their most distant listener. This would probably be nearer the mark if they added "who has sent in a report." The letter was accompanied with some advertising matter, and a photograph of Miss Olive Palmer, who they announce as "Radio's most popular soprano."

OFTEN a short-wave detector will work at a lower temperature than its rated value.

World Telephony.

THE following from the "Listener In" (Australia), dealing with the importance of wireless beam development in Empire telephony, is of interest to short-wave listeners:—

"It is understood that further important developments may be expected shortly in connection with beam wireless communication, and that Senatore Marconi is nearing the completion of experiments, about which a great deal of secrecy has so far been maintained, for the simultaneous transmission of wireless telephony and wireless telegraphy over the beam system.

"As wireless telephony, to be a commercial success, must be available at a reasonable cost to the user, Senatore Marconi directed his attention to developing a system at the lowest possible cost. His experiments were on the lines of combining wireless telephony with wireless telegraphy, and with producing a system in which the greater part of the apparatus used for a wireless telegraph service could also be used simultaneously for a wireless telephone service. It is understood that his experiments have been crowned with complete success, and tests are now taking place across the Atlantic with apparatus which it is claimed will operate two high speed telegraph circuits simultaneously with one duplex telephone circuit, utilising the same transmitter and aerial and only one wavelength for all three circuits.

"It is understood that the time is not yet ripe for a statement in regard to the possible date for the opening of

Round the World on Short Wave

Notes of special value to short-wave enthusiasts are contributed weekly to the "Radio Record" by Mr. F. W. Sellens, Northland, Wellington. Observations from others are welcomed.

such a service, which will naturally be a matter for discussion with the Post Office, which is now operating the Dominion beam services, but that the tests indicated that such a statement may not be long delayed.

"One of the Marconi engineers engaged in these tests seen by a Press representative, said:—

"Some preliminary experiments took place about twelve months ago, and as a result of discoveries then made more complete apparatus has been designed and manufactured.

"A few days ago this apparatus was taken down to the wireless stations, and installed ready for test. We could hear our friends in Canada perfectly in spite of the fact that high speed telegraph services were being conducted by means of the same apparatus and the same aerial.

"Those who have taken part in these tests are very much impressed with the wonderful results obtained. There will be no difficulty in connecting the telephone to the whole of the landline telephone system on either side of the Atlantic or in any country between which a similar service is established by means of the beam system and conversing with a clearness equal to that of the best telephone system in this country."

Revolving Beams.

"The possibilities opened up by these new developments are enormous. One can picture the world in the near future being so completely linked up by wireless that no one will be out of reach of the rapidly expanding tentacles of the telephone service.

"From the strategic point of view, a revolving beam is likely to be of great value. One of the few criticisms which has been made of the beam system is that, owing to the fact that the waves are radiated over a narrow angle, a large number of beam stations might be necessary to enable the British Admiralty, for instance, to establish communication with the fleet in any part of the world.

"With a perfected revolving beam this difficulty would disappear entirely, and it would be possible to communicate by beam telegraphy or telephony with any ship at any time in any part of the world."

Reception Improving.

DURING the past week reception from 5SW, Chelmsford, England, has improved at the time I am able to

listen, i.e., up till about 7.30 a.m. They have also been heard, very weak but partly intelligible, at 11 p.m. This has not been possible for some time. Probably the most interesting reception since last writing was a speech and bagpipes from Dundee through 5SW. Very little of the talk was readable on account of quick fading, but there was no doubt about the bagpipes.

Saturday, August 11.

5SW, 6 a.m., signals were only R1-2 (with a screen grid). This increased to R4 at 7 a.m. From about 7.20 till 7.30 a.m. the above Scotch relay (on rebroadcast) was heard. 7.30 a.m. Greenwich time, signal, followed by announcement that "you have been listening to the programme radiated from Dundee."

2XAD, 21.96 metres, at 1 p.m. was R3 (on the speaker) and increased in volume to R6. The programme till 2.30 p.m. was supplied by the National Broadcasting Concert Bureau. From then till 3.30 p.m. dance music was relayed from Reilly's Lake House—closing 4 minutes past midnight, eastern daylight saving time. PCJJ, 31.4 metres, commenced at 3.30 p.m. at strength R4, increasing to about R5-6 at 5 p.m. Volume then decreased to R3-2 when closing at 6.38 p.m. Reception was spoilt by an unsteady rushing noise all through the programme.

Sunday, August 12.

For some unknown reason neither of the Yanks could be heard during the afternoon. 2XAF, 31.4 metres, was heard at about R2 at 11 a.m. Among the amateurs heard were 1BH, Auckland, 2B1, Wellington, and 2AB, Wanganui. The latter came in at R8.

Monday, August 13.

3LO, 32 metres, was very weak when first tuned in, increasing to R5 on speaker at 7.30 a.m. with intense fading usual. 5SW at 11 p.m. was just audible, too weak to be intelligible.

Tuesday, August 14.

5SW, 6 a.m., R2-3, increasing to about R3 at 7.25. Several organ items were heard.

Wednesday, August 15.

PCJJ was tuned in at 5.30 a.m., strength R5, reaching the maximum volume at 6.30 a.m., R7, then decreasing to R5-6 at 7.30 a.m. Unsteady, with one second fading. 5SW was heard at intervals between 6 a.m. and 7.30 a.m. The orchestra was on each time. About R4 all through. 2BO Wellington was transmitting gramophone items on the 30-metre band during the evening. His strength and modulation, though good, was not up to his 80-metre work.

Thursday, August 16.

5SW at 6.30 a.m. were relaying what appeared to be a musical comedy. The name was announced as being "Gipsy Love," the last word not certain, but "Gipsy" clear enough. The cast was also given. Strength was R4 at first, increasing to R5 (speaker). On account of "surging" talk was not wholly intelligible, but the music was enjoy-

able. At 7.30 the relay was "cut out" for a moment for the Greenwich time signal, returning again to the theatre. The play finished at 7.45 a.m., when the title and cast was given. After this a talk commenced, subject not heard, but a lot was spoken about snakes. At 11 p.m. an orchestra was heard at R2-3, from 5SW. Big Ben was heard striking the half-hour first (12.30 B.S.T.).

Friday, August 13.

At 5.30 a.m. PCJJ was R9, excellent reception, very steady and modulation perfect. When signing off at 7.37 a.m. strength had decreased to about R4-5, still clear and steady. 5SW at 5.30 a.m. were transmitting a lecture which finished at 5.45 a.m. From then till 6 a.m. pianoforte items were heard. At 6 a.m., after "London calling" it was announced that the next quarter of an hour would be devoted to the works of "Coleridge Taylor," most of these being orchestral items. "King Charles" was sung at 7 a.m. At 7.5 "Norwegian Rhapsody" was announced, another orchestral item. At 7.30 the time signal was heard. During the evening 3AU Rangiora was relaying the programme of 1YA, and was heard at good strength. Static spoilt reception. At 11 p.m. 5SW was just strong enough to hear an orchestra at times, the music coming in short rushes. This is peculiar to this station, more so than any short-wave transmitter I have heard.

THE life of a radio valve is governed by the filament, which is the wire that is heated to red heat by the current from the A battery, or, in the case of alternating current type tubes, by the low voltage current from the filament heating transformer. The filament is coated with a substance which when heated produces a copious flow of electrons that travel from the filament through the grid to the plate. Excessive filament current will, of course, burn out the filament and abruptly terminate the usefulness of the tube; but if the tube is normally used, its useful life will be governed by the flow of the electrons from the filament. After somewhat over a thousand hours of use, the electron flow from the filament will gradually cease, and when it has fallen below a certain critical point the life of the valve is ended, and it should be replaced with a new valve. The fact that the filament still glows when the A battery current is turned on means nothing except that the filament is not burned out.

A BUS line operating between Birmingham and Montgomery, Ala., U.S.A., has recently equipped all of its vehicles with receiving sets that are proving popular with passengers. They give the travellers news of the day, the latest weather reports, and seasonal sports.

FRENCH radio manufacturers are christening their sets with tongue-twisting, jaw-breaking names. The Elgedyne, the Strobodine, Zutterodyne, Supermoduladyne, Tubeheterodyne, Strazodyne, and Supertridyne are a few of the names.

Printed and published for the New Zealand Radio Publishing Company at the registered office, Wakefield Street, Wellington, of the Wellington Publishing Company, by Archibald Sando, of 47 Freyberg Street, Lyall Bay, FRIDAY, AUGUST 24, 1928.

At Last ! "AH!" At Last !

WE WISH TO ANNOUNCE THAT WE NOW HAVE THE VERY COILS

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