

*2YA Afternoon Sessions Soon--What Causes Fading?
Lectures on Imperial Affairs--1YA Featured*

THE RADIO RECORD

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

Price 3d.

VOL. I, No. 3.

WELLINGTON, N.Z., FRIDAY, AUGUST 5, 1927.

Per Annum, Post Free, 10/-; Booked 12/6

The ALL BRITISH Radio Valve

With a Published

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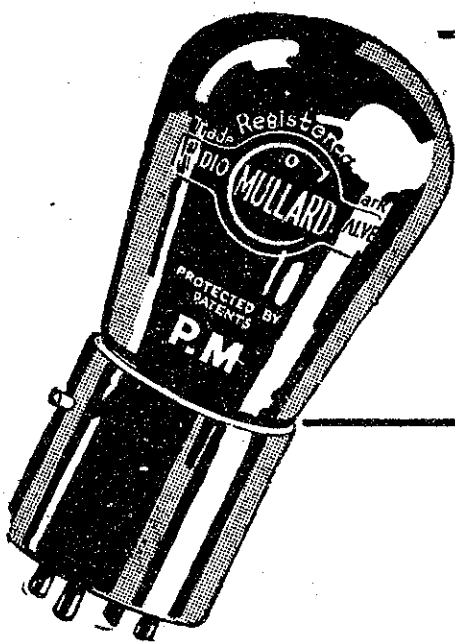
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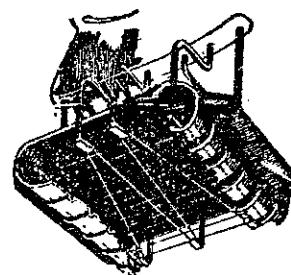
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Auckland Has Fine Station in 1YA

Heard Effectively All Over Oceania

The Last Word in Equipment

Of the New Zealand broadcasting stations, 1YA is the best-known. It bore this cognomen before it came under the control of the present company, and it had a good reputation even then. The plant was small, but it was efficiently run. The company carried on with the old plant for some time till the new station was erected. The present 1YA was officially opened in August last year. It was the first of the new stations to be erected by the Radio Broadcasting Company of New Zealand, Ltd., and Auckland for some time had the honour of being the home of the premier broadcasting station in New Zealand. Its ethereal voice has been heard far afield, for communications have been received from Canada, proving that 1YA has been heard there, and it is regularly listened to in Australia, sheaves of correspondence testifying to that. In New Zealand the station has had a great vogue. It has resulted in a great increase in the number of listeners, especially in the Auckland Province, in which nearly half of the total receiving sets in the Dominion are located.

THE OLD 1YA.

It is an easy matter to hark back to old radio broadcasting history in Auckland, for the old is really very recent. That fact alone seems to emphasise the advance which has been made, excellent as was the service rendered by old 1YA. The first apparatus consisted of a small 10-watt plant, installed by the Auckland Radio Service Company, this being replaced early by more modern equipment, operated with a power input approaching 200 watts. The radio dealers in Auckland made financial contributions to support the station and provide a broadcast service for listeners. Later, when the license fee was fixed at 30s., the station was subsidised by the Post and Telegraph Department, as well as by the dealers, until the Radio Broadcasting Company of New Zealand took control.

AN UP-TO-DATE STUDIO.

The studio was erected in France Street, a short distance from the transmitting plant. The building is of brick and concrete, two stories in the front and one in the rear. The main studio, situated at the back, is a very fine room, 40 feet long and 24 feet wide, suitably furnished to provide the acous-

The Auckland broadcasting station, 1YA, is described in the accompanying article and pictures. The station is of 500 watts, the same power as the Christchurch station, but it differs from Christchurch and is like Wellington in the fact that it is not all on the one site. The studio is a short distance away from the transmitting station. The former is in France Street and the latter is on the roof of the premises of Messrs. George Court, Ltd., on Karangahape Road. It is a commanding position, the aerial being 500 feet above sea level. The transmitting plant is identical with that at the Christchurch station, and is absolutely up to date.

tic properties necessary to broadcasting. The walls are draped with soft grey curtains, with a heavy carpet to match.

On the opposite side of the main entrance hall is a large reception hall and lounge, with a cloakroom adjoining. Upstairs are well-appointed dressing-rooms, janitor's room, kitchenette, and a large smoking lounge and supper room, furnished for the comfort of artists broadcasting.

The official opening of 1YA took place last August, the ceremony being performed by the Hon. W. Nosworthy, Postmaster-General. Other high Government and Broadcasting Company officials who were present included the Mayor of Auckland (Mr. G. Baidon), the Chief Telegraph Engineer (Mr. A. Gibbs), the then Secretary of the Post and Telegraph Department (Mr. A. T. Markman), and Messrs. W. Goodfellow and A. R. Harris (chairman of directors and general manager, respectively, of the company).

In a small room adjoining, with a sound-proof window to the studio, the announcer is accommodated. Here he has a switchboard for the necessary microphones, relay wires, and signals to the transmitting room etc. By means of these signals he keeps in close touch with the operator in the transmitting room, where there are red and green lights corresponding with those in the announcer's room.

WHERE THE WAVES COMMENCE.

The transmitting plant, the real mechanism, is in a building on the roof of Messrs. George Court's. Here are the motor generators, the transmitter, and the switchboards. It is in the transmitter that the secret of radio broadcasting lies. Here the electric power is converted into radio energy and sent out on the air by means of the aerial, to be collected by thousands of receiving sets throughout a vast area. The vacuum tubes of the transmitter

are of the same type as those of the small receiving set, but many times larger. They are the secret, and the key of broadcasting.

In the transmitting room is a loud-speaker, which is necessary to enable the operator to control amplification. There is the amplifier, the transmitter panel, and the power panel, all representing the latest developments in the science of wireless.

The aerial is 500 feet above sea-level.

generator, both direct, connected to a driving motor. The motor drives the two generators, one giving power at 1600 volts and the other, a small one, power at a very low voltage.

The power switchboard is of the "dead front" type, which means that, although the control handles appear on the face of the switchboards, all of the current carrying portions are mounted at the rear of the slate panel to protect the operator from accidental contact.



A corner of the lounge at 1YA.

—Shaw, photo.

Each tower weighs approximately three tons, and is 100 feet high. The span between the masts is 180 feet, and a flat-topped T-aerial is erected between them.

THE TRANSMITTING ROOM.

The power supply for the radio transmitter is obtained from a three-unit motor generator set, consisting of one high voltage and one low voltage D.C.

The switchboard is completely enclosed by a metal cabinet. An automatic safety switch shuts down the motor generator when the door of the cabinet is opened. The motor of the motor generator set is started or stopped by means of momentary contact push-buttons, provided on the panel, but a similar push-button is located in the control room.

RADIO ENERGY.

In the operating room is the radio transmitter, whose function is to generate radio frequency energy, this energy being modulated in accordance with the current variations produced by a microphone operating in conjunction with an amplifier and certain other auxiliary equipment. Four valves are used, two as oscillators and two as modulators, and a delayed action relay permits the filament to attain its normal temperature before the plate voltage is applied. The electrical power required for the valves is of interest, and the constants are:—Plate potential, 1600 volts; total plate current, .9 amperes; filament potential, 14.3 volts; total filament current, 29.3 amperes. All necessary electrical meters for checking the operation of the radio transmitter are provided on the panel.

In addition to the apparatus described, there are, of course, the microphones and other associated amplifier equipment. A three-stage amplifier builds up the feeble microphone currents to the required strength, the amount of amplification being adjusted by the operator. There is also a single stage amplifier, which amplifies a small part of the output from the large amplifier sufficiently to actuate the monitoring loud-speaking telephone in the control room. The control room operator then has an aural check on the indications of his instruments.

TAUGHT BY WIRELESS

TREAT FOR COUNTRY CHILDREN.

This interesting announcement was made by Mr. T. B. Strong, Director of Education, in the course of an address to the Women's Division of the Farmers' Union Conference last week. Mr. Strong devoted special attention to explaining the correspondence method under which the Department met the needs of those children isolated on lighthouses, islands, and far-back farms and settlements. Very good results have been secured amongst the hundreds of children so situated in the Dominion. It was also found that the system was educating the parents, who, of course, were appealed to by the children for assistance in answering their papers.

They were hoping to adapt wireless, not only to the teaching of it is section of the community, but to country schools generally. The intention was to have a weekly lesson broadcast by wireless to those country schools equipped with loud speakers. This is a development made possible by the new 2YA Station, Wellington, with its super power, which brings all parts of New Zealand within touch by day or night.

BRITAIN LEADS

WORLD'S STRONGEST RADIO STATION

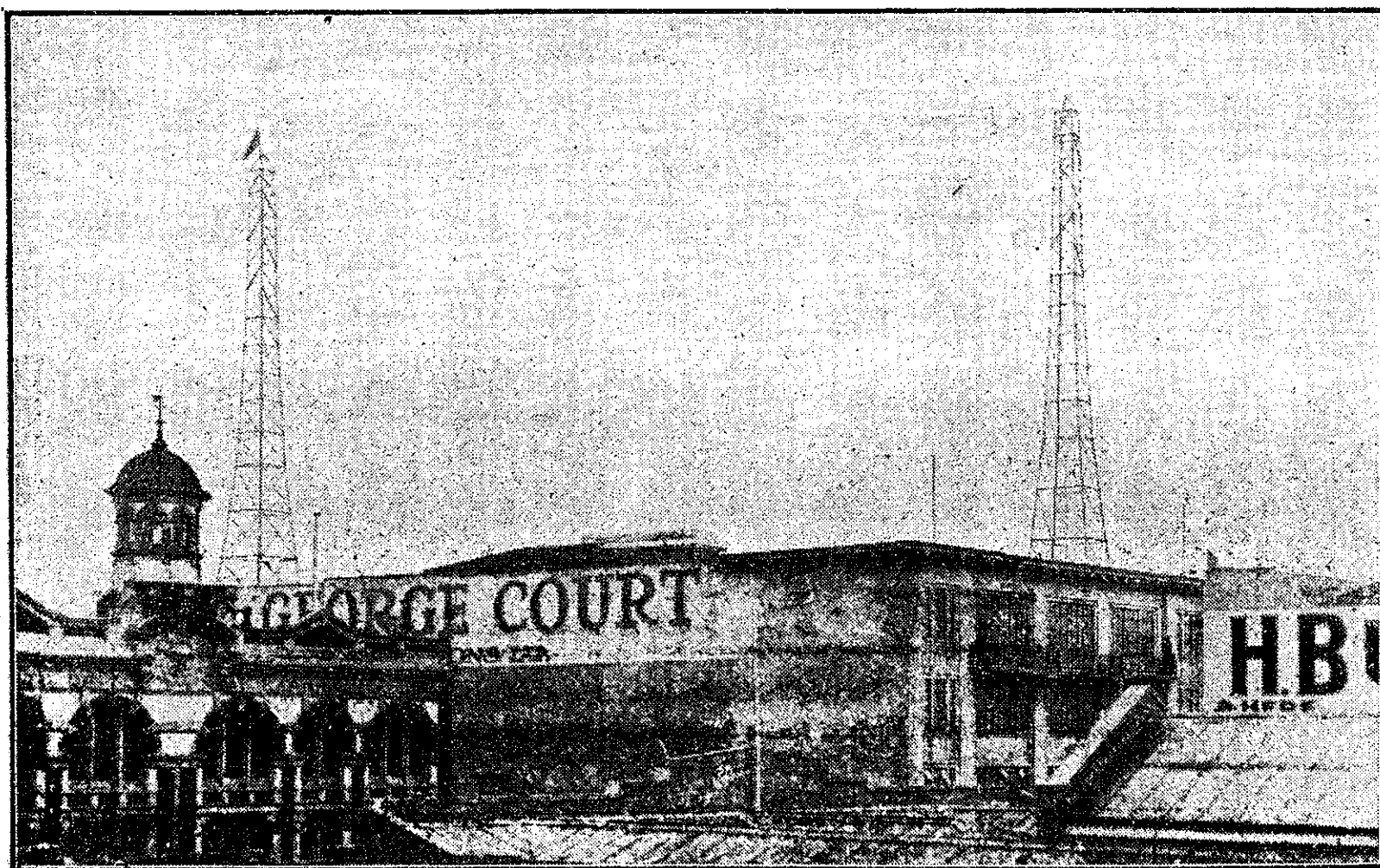
A series of tests conducted jointly by the U.S.A. Government Bureau of Standards and the American section of the International Union of Scientific Radio-Telegraphy to determine the strength of signals from commercial radio-telegraph stations shows that the one at Rugby, England, is the most powerful in the world, according to laboratory records.

The tests were conducted during the months of September and October, 1926, and the stations tested, rated according to their signal strength, are as follows:—Rugby, Bordeaux, Ste. Assise, Nauen, Monte Grande, and Rio de Janeiro.

The weakness of the signals from the famous German station at Nauen, of which so much was heard during the World War, was a surprise to the compilers of the report. The French station at Bordeaux, once regarded as unapproachable for the strength of its signals, is revealed as sending far weaker signals than Rugby, which was completed last summer.

NEW CANADIAN STATION

Negotiations are at present under way for the establishment of a 1000-watt broadcasting station just outside the limits of Toronto (Canada). The new station will be the property of the Ontario Government and will be used by the Ontario Agricultural Department for broadcasting lectures, weather and other service reports and possibly programmes.



1YA is situated on the top of George Court's building in Karangahape Road, Auckland—a commanding situation, well placed above the city, and clear of any clouding surroundings. The studio is nearby in a separate building. —Shaw, photo.

What is the Real Cause of Fading?

The effects of fading of short wave (under 600 metres) signals are too apparent to the broadcast listener to need discussion, while on the other hand little is known of the cause. In the following pages the factors determining the received signal strength are considered.

From the earliest days of radio telegraphy it has been known that radio signals may vary in strength quite apart from faults or lack of adjustment of the apparatus at the transmitting or receiving station. An operator may be listening to good signals from a distant station when these may gradually decrease in strength, until sometimes they become too weak to read, and then increase again until they become stronger than they were originally. Such phenomena are described as "fading effects," and their explanation is to be sought in the factors influencing the propagation of the wireless waves in the intervening space between the transmitter and receiver.

BROADCASTS FADE.

Fading effects are more commonly met with in the reception of short waves (i.e., waves of the order of 600 metres and below) received by night over long distances. The increase in the numbers receiving broadcast signals and also the increase in amateur communication over long ranges (as, for example, the reception of American amateur stations in this country), have brought these effects recently into great prominence.

The growing interest in short wave communication is to be welcomed by all interested in the scientific aspects of wireless communication, because the study of transmission on such waves is likely to lead to the collection of valuable data bearing on the solution of problems of the propagation of waves, the explanation of which are at present matters of conjecture.

Fading effects are closely allied to other phenomena of wireless transmission, such as the fact that the range of a wireless station using short waves is always greater by night than by day, or the occurrence of freak ranges when signals from a station usually inaudible at a particular spot can be heard occasionally by night. Any general hypothesis advanced to explain any one of these effects must be capable of explaining the others.

ATMOSPHERIC CAUSES.

The hypothesis which is generally accepted to-day is that the upper rarefied regions of the atmosphere contain a large quantity of minute dust particles charged with electricity which have been driven out from the sun and caught in our atmosphere. Such particles have the effect of making the portions of the atmosphere in which they occur semi-conductors of electricity. The physical constitution of the upper atmosphere makes it probable that these particles are sorted into more or less definite layers, the lowest of which may be supposed to be about 100 kilometres from the surface of the earth. At night time these layers, encircling the earth as a semi-conducting shell, may be expected to have fairly sharply defined under surfaces. Under the direct influence of sunlight, however, it is probable that the rarefied gases of the atmosphere are directly ionised; that is, the atoms which compose them are broken up into positive and negative particles called ions. These ions will penetrate into the atmosphere to distances considerably below the permanent semi-conducting layers already described.

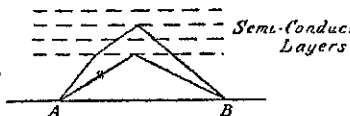


Fig 1.—By night, waves from the point A reach B, by the path shown.

AFTER SUNSET FADING.

After sunset, when the direct action of the sun is removed, the positive and negative ions recombine, leaving the space below the lowest permanent semi-conducting layer practically free from ions, and therefore an insulator.

Several years ago a classic series of experiments carried out by Austin and Cohen led to a somewhat complicated empirical formula being evolved giving the strength of the voltage to be expected at a receiving aerial at various distances from the transmitter. Recently Professor G. N. Watson has shown mathematically that, assuming wireless waves are conducted round the earth in an insulating shell between a semi-conducting earth and a semi-conducting layer in the atmosphere, a formula exactly of the same form as the Austin-Cohen formula is obtained, and this result lends very strong mathematical support to the supposed existence of such layers in the atmosphere.

We may now consider the effect of the ionisation on the propagation of wireless waves. When a medium is a semi-conductor the effect is to increase the velocity with which a wave passing through the medium travels. In the daytime, therefore, when the under surface of the lowest semi-conducting layer is ill-defined, the upper portions of a wave from a transmitting station will pass through an ionised portion of the atmosphere. These portions of the wave will travel faster than the lower portions which travel along the earth's surface, and the wave will therefore be tilted over or refracted towards the earth and will be absorbed in the ground. Also, when the waves are passing over dry soil, which is not a good conductor of electricity, the foot of the waves will be pulled backwards, so that absorption by the ground will take place more quickly than if the wave

Complaints, by broadcast listeners, of "fading" are like the poor—always with us. The novice is generally convinced that all "fading" is due to a fault at the transmitting station, while as a point of fact, fluctuations in strength of reception are seldom occasioned by that cause, owing to the provisions embodied in the technical equipment of a broadcast station.

The following article, though written some time ago, throws much light on the subject of "fading," and the general theory of the phenomenon, as expressed therein, remains the most popularly accepted hypothesis by scientists throughout the world. New Zealand listeners who complain about "fading" will find the following as instructive as it is interesting. It is from the pen of O. F. Brown, M.A., B.Sc., technical secretary to the British Radio Research Board, and was written to give British listeners some idea of the cause of "fading," apart from the effects with which all are familiar.

were passing over sea water, for example. There is in addition probably an absorption and scattering of the actual energy of the wave by the charged particles in the medium, and this absorption is greater for short waves than for long waves. The general effect of these factors is to make the day range of short waves (under 600 metres) comparatively small.

NIGHT FAVOURABLE.

At night the lower portions of the atmosphere are clear of ions and the surface of the semi-conductive layers more sharply defined. Thus, instead of the waves entering a charged medium and being refracted, they will encounter charged layers which can act as semi-reflecting surfaces, just as the surface of water acts as a partial reflector for light waves. As the short waves are more easily absorbed, so, from the physical principles involved, they may be expected to be more easily reflected than longer waves. The layers are semi-transparent to the waves, and part of the energy in the waves will be transmitted and refracted by each layer and part will be reflected. The amount of energy reflected depends on the angle at which the waves meet the surface. If this is a large angle most of the energy will pass through the layer; as the angle gets smaller as more energy is reflected.

By night, then, waves from a point A may be supposed to reach B by paths such as are shown in Fig. 1. Although the layers at night are moderately well defined, it is to be expected that the shape of the layers is continually varying, and the paths by which waves may reach B from A will be affected by the changes in the surfaces of the layers. The signals received, therefore, will be by no means constant in strength; in other words, "fading" effects will certainly occur at night either through changes in the constitution of the semi-reflecting sur-

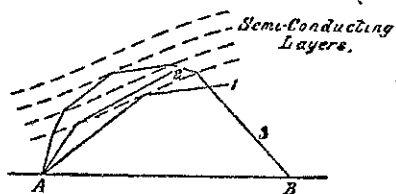


Fig 2.—If the layers become bent, waves travelling along paths (1) and (2) are reflected and refracted and are lost by absorption in the upper atmosphere, while those travelling more vertically reach B by the path (3).

face or through changes in the direction of the layers, both of which factors will affect the paths taken by the waves. Figs. 2 and 3 illustrate roughly how the variation in signal strength

may arise through alterations in the arrangement of the layers. Should the layers be bent as shown in Fig. 2, then waves travelling along paths (1) and (2) are reflected and refracted so as to be lost and absorbed in the upper atmosphere. The waves following path (3) which reach B are those radiated in a more vertical direction than those reaching B in Fig. 1. As very little energy is usually radiated vertically from an ordinary aerial the signal strength at B will be decreased. Similarly from Fig. 3 it is seen that if the layers lie in the other direction the strength of signals at B will be increased.

IONISED LAYERS.

It thus appears that the strength of signals received, especially on short waves, will be influenced by the condition, as regards conductivity, of the portions of the atmosphere through which the waves pass. The paths which the waves take will depend on

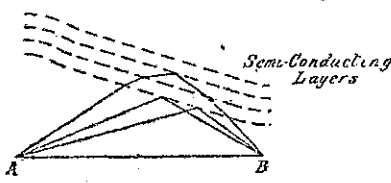


Fig 3.—Here, the layers lie in the opposite direction, thus causing the signals to be increased in the direction of B.

the sharpness of the ionised layers, and the number of charged particles in the layers from moment to moment, and even on the varying arrangement of the particles in the layers.

The strength of the signals may also depend on the nature of the ground between the receiver and the transmitter, and may be influenced by changes in its electrical conductivity produced by the presence or absence of rain. The signals may, in addition, vary through the changes in the electrical state of the lower atmosphere. For example, the presence of thunder clouds may cause local absorption or deflection of the waves.

SUNSET AND SUNRISE.

In particular, just at sunset and sunrise the changes taking place in the conductivity of the atmosphere will be very great, as the direct ionising effects of the sun will cease and begin at those times. Fading effects may, therefore, be expected to be very pronounced, and experience fully supports this expectation.

The only way in which these complicated phenomena can be investigated is by carefully organised simultaneous observations carried out over a long period. The British Radio Research Board established under the Department of Scientific and Industrial Research has

taken a step towards the investigation of the problem along these lines by enlisting the co-operation of amateurs through the Radio Society of Great Britain and its affiliated societies. In many districts arrangements have been made for several observers to record the strength of the signals from the Broadcasting stations whose transmissions are on wave-lengths likely to show fading effects, and to forward their observations monthly to the secretary of the board for analysis. The measurement of signal strength, unfortunately, is a matter of the greatest difficulty if accurate results are desired, and it is impossible outside a fully-equipped laboratory. Isolated observations may, therefore, not always be reliable. Nevertheless, if the variation of signals are observed simultaneously by several independent observers reliable qualitative data at least are likely to be collected, which will be of great value in the elucidation of the problems of wireless transmission.—Published by permission of the British Radio Research Board.

RADIO RECEPTION

SUN MORE TO BLAME THAN WEATHER.

High correlation between radio reception and the weather is unlikely (says the "Scientific American"), according to Dr. Greenleaf W. Pickard, who has studied the effects of the weather on radio since 1906, and his conclusions are that the activities of the sun and terrestrial magnetism are more to blame for poor reception than the weather.

"One of the outstanding problems to-day is the nature and cause of those atmospheric charges which produce such diversified effects as weather, magnetic storms and disturbances in radio reception," said Dr. Pickard. "The problem is meteorological. If the earth had no atmosphere there could be no weather and on an airless planet there could be no long-distance radio communication."

Radiation from Sun.

"The only known important force which acts upon the atmosphere is the complex radiation and emission from the sun. Changes in this force are caused in two ways; first, by the movements of the earth with respect to the sun, and second, by the actual variations in solar radiation. If the sun maintained a constant radiation, we should have only to consider the earth's rotation on its axis, which gives us night and day, and its movement is an orbit around the sun,

which, by the changing angle of the solar rays, gives us the seasons. If these movements were the only factors involved, weather, terrestrial magnetism, and radio reception would follow the calendar to a far greater extent than our measurements indicate," said Dr. Pickard.

Sun Affects Weather.

"But in the scheme of things we find that weather does not go according to the calendar, nor does radio reception. The visual evidence of sunspots, faculae, and prominences tells us that the sun is periodically disturbed, and measurements of the light and heat received by the earth have shown that this varies in general correspondence with the visible changes on the sun's disc, in fact, definite relations have been established between solar changes and weather, which have already been usefully applied to weather forecasting."

TO CLEAR THE AIR

"HAMS" COULD ASSIST

New Zealand cities are much afflicted with electric power line interference. A suggestion comes from America which if followed could do much to clear the air.

In a letter addressed to Dr. Hiram Percy Maxim, president of the American Radio Relay League, Hartford, Connecticut, Radio Commissioner Caldwell has proposed a way in which amateur transmitters could give valuable assistance in the solution of air problems. He wrote in part:

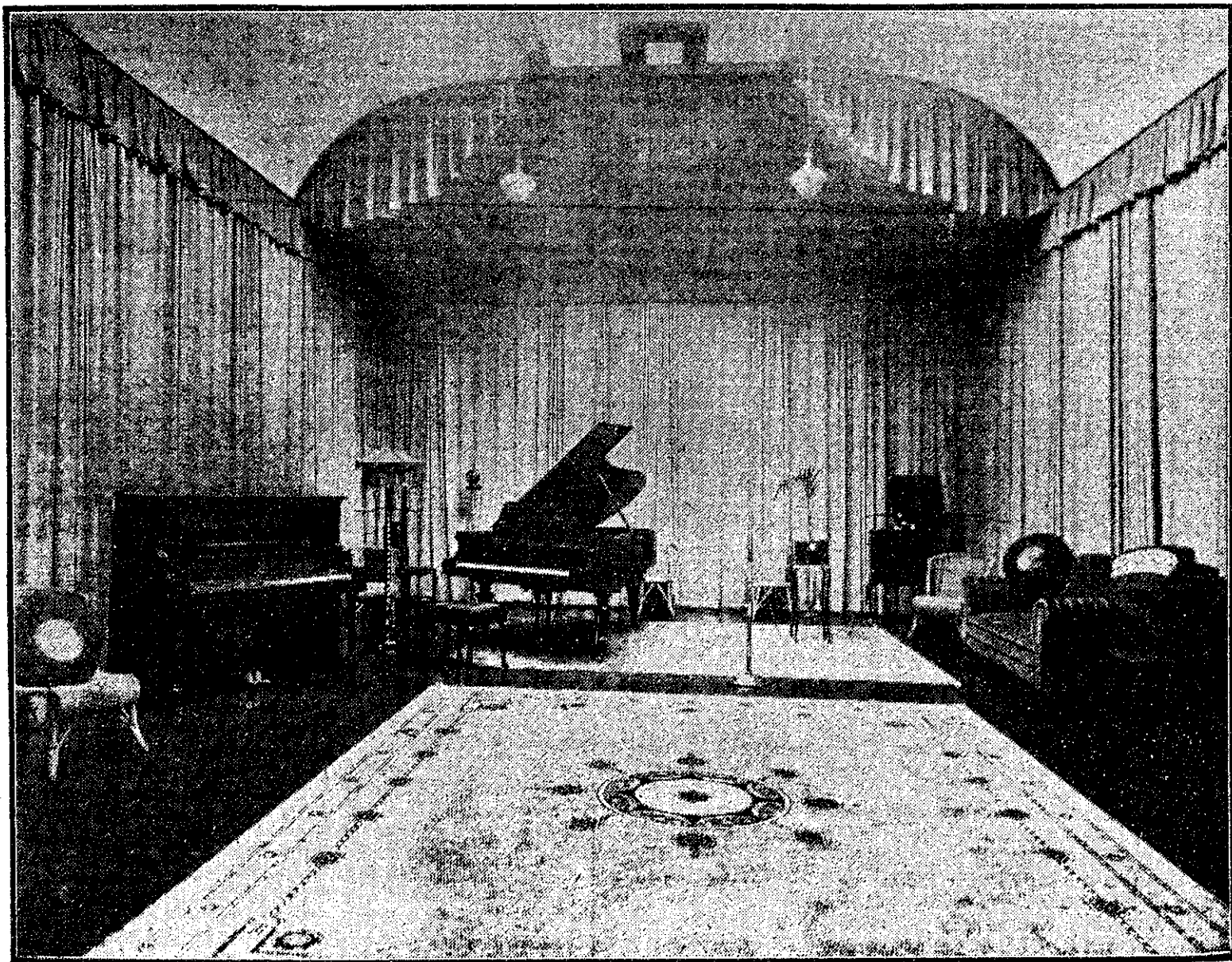
To Locate the Trouble.

"There is one opportunity for service in which your members can be of the greatest usefulness right in their home towns and communities. It is the giving of assistance in the finding of interference sources that mar broadcast reception locally. The average broadcast listener does not know how to go about locating sparking motors or switches, high-tension apparatus, faulty power equipment, code transmitters or other causes which may be running his radio reception. Yet this is easy, of course, for any radio amateur."

To Summon Aid

"If your local groups could convey through the newspapers their willingness to help their fellow-townsmen, publishing the telephone number of some members who, upon call, would act as chief trouble hunter, assigning other members to help, I believe much interference could be located and remedied."

Radio has, it is reported, accomplished the formerly impossible feat of stopping a Parliamentary orator in full swing. The speeches in the Diet of Finland are broadcast for the popular benefit; and one long-winded orator who was "talking for Buncombe" reached his mark. He was suddenly interrupted by a long-distance telephone call from indignant constituents with a warning that he was wearing out his popularity by his lack of terminal facilities. The astonished statesman at once yielded the floor.



INTERIOR OF 1YA STUDIO IN FRANCE STREET, AUCKLAND.

—Photo, Whitnall Smith.

THE NEW ZEALAND Radio Record

PUBLISHED WEEKLY.

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

LITERARY MATTER.

All literary matter and contributions must be addressed to the Editor. If the return of M.S. is desired, enclose 1d. stamp.

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

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

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

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

P.O. Box 1032,
WELLINGTON.

WELLINGTON, AUGUST 5, 1927.

BROADCASTING AS AN EDUCATOR.

The announcement we feature in this issue that as from August 5 there will be broadcast from 2YA a weekly lecturette on Imperial affairs is of the first importance, and indicates in striking fashion the potential educational and informative value of the broadcasting service. For the preparation of the matter, the full resources of the Imperial Affairs Branch of the Prime Minister's Department will be drawn upon, so that a fully authoritative and reliable exposition of facts and the trends of events and opinions will be available. The series will be inaugurated by a talk upon Samoa, now so much discussed. Thereafter will be treated subjects of so vital but diverse a nature as the Imperial Conference, Naval Disarmament, the Singapore Base, the League of Nations, China, Egypt, etc., all of which have a definite bearing upon our fate and future, remote as they may seem.

The official announcement conveys two reassuring promises. First, there is to be a time-limit of fifteen minutes, and care will be taken to treat the subjects in as interesting and attractive a form as possible; secondly, it is the aim to give the facts only in reliable and authentic fashion, and not attempt the giving of advice or undue guidance of public opinion. The value of this service, developed along these lines, of cultivating a fuller knowledge of essential facts, from first-hand sources, cannot be overestimated. It makes direct contact between official knowledge and information, and the people themselves. This direct contact with the great body of the people has already been developed overseas, a striking case of which our news columns this week gives some information, being President Coolidge's address, by means of broadcasting, to an audience of 20,000,000 people. On that precedent, and having regard to the rapidity of modern developments, the day is not far distant when by careful relays and organisation, it will be possible for the general body of New Zealand listeners to hear in their own homes our Empire Leaders addressing gatherings of note in Britain. Our local development but shows the way—indicates the binding value of broadcasting.

Further emphasis upon the educational value of broadcasting is this week laid by the announcement of the Director of Education that speedily certain country schools will be equipped with wireless receiving sets, when regular morning lessons will be broadcast for the benefit of isolated children, of whom our backblocks contain many. These developments give check to the undue emphasis that in some quarters has been laid upon the lighter side, the entertainment side of broadcasting. That is important, unquestionably, and in the development of this phase a great service has been rendered the community by the moulding and perfecting of a machine that can be turned to greater good. Without popularisation of its entertainment side, broadcasting would not have advanced at the rate it has. But late reports from world centres indicate that the unrestrained demand for jazzing entertainment by means of broadcasting is slowing down, and as the more stable sections of the community perceive its possibilities and instal sets, the demand is setting in for a service of real news and educational value. The real difficulty of broadcasting lies in assessing a fair balance between the varying demands of a changing and discriminating public. That task is accentuated in New Zealand by the limited number of stations, and the comparatively limited range of selection, but with experience, concentration and the addition of new features along the lines indicated, a valuable service will be made available to all.

AFTERNOON SESSIONS OPEN SOON.

A further new feature of the immediate future will be the inauguration of afternoon sessions from 2YA. These should be "on the air" from the middle of August, and will immediately provide a service of particular appeal to home-keepers in both city and country. Much thought and effort is being put into the planning of this feature, which, on account of the exceptional power of 2YA, may be expected to cover practically all areas of the Dominion. With concentration on these lines of service, we are sure there will be witnessed a tremendous accession of interest in the use of broadcasting reception. To that end we incorporate in this issue a new feature under the title of "From the Woman's Point of View." This will be specially conducted to serve home interests and evoke the woman's attitude to the service she expects from broadcasting.

OUR THANKS TO READERS.

We have to express our appreciation and gratitude to the thousands of readers whose subscriptions are rolling in daily, and taxing our staff to the utmost. The reception accorded our establishment, particularly by country listeners, has been most encouraging and gratifying. In connection with the complimentary distribution to listeners of our early issues, our aim and desire was to send a copy to all holders of annual

licenses. To that end we contracted for the typing of wrappers from the official lists, as prepared to April 30, and for the supplementary months. Owing to the limited period between the final decision to issue the "Radio Record" and the first publication—much less than a fortnight packed with organisation and work—it was humanly impossible to have all wrappers checked, and we therefore had to expect some letters voicing complaint as to non-receipt of these complimentary copies.

Will those so suffering please accept our apologies and assurances that no such omission has been intentional, but due purely to mischance or human error?

In the case of recent registrations every effort has been made to bring them up-to-date for inclusion, but as the rate of registration recently has reached nearly a thousand a week, the hopelessness of our stern chase will be apparent. Our first two issues have been completely exhausted, and further supplies cannot now be sent. Extra copies of this, our third issue, are being printed to give the most effective distribution possible.

The "Radio Record" is now definitely on a subscription basis—namely, as an introductory offer, 7s. 6d. per annum, post free if remitted before August 13, thereafter 10s. per annum prepaid. We thank all who have so far subscribed, and would particularly ask intending subscribers to write in at once. We have a big task before us organising the thousands of addresses into stencil form, and sorting into postal districts, to facilitate delivery. Moreover, for future copies, we shall print approximately only the number required for subscriptions, with a margin for expansion and late-comers.

We don't want to disappoint anyone, but to save missing your programmes, please write early!

While our reception has been uniformly cordial, one note of criticism is directed from a certain quarter against the programmes being copyrighted. This criticism is so unreasonable as to create the suspicion that those concerned are being made the stalking horse of private interests. The general practice throughout the world is to copyright such programmes. They are specifically copyrighted in Australia, and the official organ of the British Broadcasting Corporation carries this announcement: "The reproduction of the copyright programmes contained in this issue is strictly reserved." While copyright has been applied to our programmes, no variation has been made to the past practice of the daily Press publishing the daily programme. On the contrary we gratuitously supply the Press with copies of the "Radio Record" to that end. In the past no daily paper to our knowledge has published more than the one day's programme, so that no disability whatever is imposed by a continuance of past practices.

On the contrary, our publication of the full programmes in advance for the ensuing week constitutes a special service which the Press has been unable to render—indeed, it would be outside its function—and we cannot but think that the general body of listeners will detect the speciousness and interestlessness of the complaint made.

In addition to our programme service, there will be given in our columns a full service of news and technical articles, and a platform for contact between the listener and the service company for the better understanding of problems and points of view.

NEW MICROPHONE

"CONDENSER" TYPE
FOR 2YAGOOD FOR MASSED
EFFECTS

A new type of microphone, known as the "condenser," has lately been placed on the market, and a number have been ordered from England by the Radio Broadcasting Company for use at 2YA, Wellington. The condenser microphone has already been used at 3YA, Christchurch, with most satisfactory results. It is possible one of these microphones will shortly be sent up from Christchurch to 2YA, Wellington, for use in the big studio in the capital city until the microphones on order arrive from England.

EXCELLENT FOR BANDS.

Condenser microphones constitute one of the most important features in the new equipments for broadcast stations. Viewed as one of the recent triumphs in radio engineering, the new "mikes" are of inestimable importance in the broadcasting of large programmes.

The condenser type of speech unit permits the mixing of as many as four microphones, distributed at various places in a studio or concert hall, to carry one programme. For example, the concert of a 100-piece band, sections of which would be practically lost in a single microphone output, obtains better transmission through the multiple arrangement.

PERFECT BLENDING.

With such a scattered microphone output, the blending is made harmonious and of the desired balance by the control-room operator. It is left to the judgment of the announcer to determine how many microphones are required to obtain perfect transmission of a programme.

BETTER THAN CARBON TYPE.

The advantage, which the condenser microphone has over its rival instrument, the carbon microphone, is largely a matter of tone quality. The condenser "mike" brings out a more rounded, full-depth tone. The annoying hiss and ground noise often attending the use of carbon units is also overcome. The level or relative loudness of speech output from the condenser microphone combination is approximately the same as with the old style.

An interesting sidelight on the new multiple output system is the fact that

the control-room operator may cut out any microphone which is causing trouble, and mix in a new one without the change being detected by the radio audience.

LOOKS LIKE A CAMERA.

In appearance the condenser microphone resembles a somewhat elongated box camera. Finished in black crystallised lacquer, the microphone box is mounted on a gunmetal pedestal, which may be adjusted to any desired height. A 1½-inch aperture in the face of the box admits sound to the diaphragm.

The condenser microphone is equipped with the necessary circuit to carry the voltage applied to it. One stage of amplification is used with a specially developed vacuum valve and output transformer. The battery voltage for the "mike" unit and the amplifier valve is fed to the instrument in a thin, flexible cable. This may be of any length, satisfactory tests having been made with a 900-foot run.

A BOXING BROADCAST

NOISY, BUT WELCOME

INCIDENT AT 3YA

The other evening 3YA relayed from the ringside a description of boxing championships. Induction was very bad on the land wire and the broadcast was noisy.

Ring! Ring! Ring! went the telephone continuously, and the protests were very forcible.

So 3YA cut off the relay and switched back to the studio, where some excellent artists had been giving a concert, and the concert proceeded.

RING! RING!! RING!!!

There was a hectic ten minutes in the station director's sanctum. Listeners from all over the countryside rang up. They wanted the boxing. There was no noise. The relay was really perfect, they said!!

In the meantime, efforts had been made to improve the relay wire, and in due course the ringside description was taken up again. What if it was a bit noisy still? It pleased a whole lot of people till 10.30.

The noisy relay line in this case shows that the success of all broadcasting hangs on a fine thread. That wire was tested before the boxing commenced, and was found to be O.K.

The Bishop's Sermon Affected.

In Auckland a breakdown in the relay line to St. Matthew's Cathedral, Auckland, prevented Bishop Averill's service from being broadcast on the evening of last Sunday week. This line, too, was tested before the service. All relay lines are always carefully tested, but faults may develop subsequently.

THE WAVE-LENGTH
ISSUE

AN AUSTRALIAN VIEW

WHAT THEY THINK OF 2YA

A Melbourne writer, "Ray Dio," has this interesting comment to make about 2YA and the New Zealand wave-lengths:—

"Although broadcasting has been slow in developing in New Zealand it now appears that a definite and useful advance is being made. Special laws were passed in 1923 by the Dominion Parliament, including the now famous Act dealing with wireless patents, and the preliminaries of broadcasting were undertaken. Several stations commenced more or less amateur services and the Post Office sold some licences. The broadcasters soon realised that one of the most important factors was finance, and the industry did not move forward with any rapidity. After many discussions a more promising step was taken last year, and the New Zealand Broadcasting Company was licensed to operate stations in Auckland, Wellington, Christchurch, Dunedin, and other towns. The Auckland station 1YA, now made known to many Australian listeners, was opened last year, and although its power is less than the biggest Australian stations, the transmission has been much appreciated.

High Power Station for Wellington.

"Now the company is about to open a big station at Wellington. It will have a power of about 12½ to 15 kilowatts. That is about two to three times the power of 3LO, Melbourne. The wave-length is to be 420 metres. The intention of the company in using a station that will be as big as the famous WPAF station in New York apparently is to provide a service that will cover the whole of New Zealand for low-powered sets. That, of course, is quite a commendable idea, although the Australian experience of fading will no doubt be encountered. But what is more interesting to Australian readers and listeners is the wave-length selected.

Will Wave-Length Cause Interference in Australia?

"We have a station in Sydney on 440 metres, and one in Adelaide on about 400 metres. It looks as if there will be some interference. The Australian stations within 20 or 30 metres of 420 metres will not be received in or near Wellington with any degree of satisfaction, and any reception of 2YA in Sydney or Adelaide or in the other capital cities for that matter is not likely to be satisfying unless a specially selective receiver is used. Of course we do not know if the authorities in Australia and New Zealand responsible for designating the wave-length of broadcasting stations have consulted each other. But if they have not, it looks as if some understanding of each other's conditions is essential. If one country so near as New Zealand can use a wave-length that is likely to be the cause of interference to listeners in Australia, or if a high-power Australian station is given a wave-length that the New Zealanders consider should be free to them, there is sure to be some trouble. Confusion and dissatisfaction arose in Canada from a similar difficulty. The United States broadcasters "jumped" wave-lengths that were, by a gentleman's agreement, allotted to Canada. The main cause of the trouble there was due to the fact that the United States Government found that it did not have the power to order its own companies off the wave-lengths they had jumped. That difficulty has been overcome by the Radio Act passed by Congress last December.

High-power Stations in Japan, Too.

"This wave-length problem is an international one. We hear that the Tokio station JOAK is going to increase its power from 1000 watts to about 40,000 watts, and as its wave-length is 375 metres, there will certainly be some difficulties to be met by patrons of 3LO on 371 metres. There is nothing to prevent Java starting a 50 kilowatt or 100 kilowatt station on 370 metres. Such a station would be all right for Java listeners, but the effect on Australian listeners who want 3LO would be very serious. It only shows the necessity for some international body like the League of Nations undertaking the responsibility of straightening out these matters of radio wave-lengths."

How Our Wave-lengths are Fixed.

Supplementary to the foregoing, it may be explained that in New Zealand wave-lengths are allocated by the Post and Telegraph Department, and it has been made clear that the present arrangement is only tentative. In Australia a Royal Commission has been delving into wireless matters, and after its deliberations have been made public the question of the Australian wave-lengths will be opened up. Quite probably a conference will take place between the New Zealand and Australian authorities, subsequently, to arrange the wave-lengths of all broadcast stations in the two countries in such a manner as to preclude clashing or overlapping.

In Europe the broadcast position became intolerable owing to a number of high-power broadcast stations in different countries transmitting on wave-lengths in proximity to one another so that chaos reigned in the ether. This was responsible for an international conference of broadcast interests at Geneva, at which Great Britain was represented. After a lengthy sitting a scheme of wave-lengths was agreed upon which effectively untangled the skein, and now very little interference occurs between European broadcast stations.

On Imperial Affairs

IMPORTANT SERIES OF TALKS

BY COURTESY OF PRIME MINISTER

COMMENCING AUGUST 5 FROM 2YA

On August 5 2YA will inaugurate a series of weekly lecturettes on Imperial and foreign affairs, and it is hoped to make these a permanent feature of the service.

The intention is to provide in as attractive and informative a manner as possible a weekly commentary on those aspects of world movements that are of interest to New Zealand and New Zealanders, and with the approval of the Right Hon. J. G. Coates, arrangements have been made to obtain from the Imperial Affairs Branch of the Prime Minister's Department information of a reliable and authentic nature. As the Imperial Affairs Office is kept in constant touch with the latest developments, and as the lecturettes will be based upon facts supplied by that office, it is hoped that these talks may serve as an authoritative exposition of the events of the day, and of their bearing upon this country.

It is not intended to inflict upon listeners a long and uninteresting array of facts and figures—the object will be to present each subject within the limits of a fifteen minutes' talk in such a manner as to be entertaining as well as instructive.

It is unnecessary to call the attention of listeners to the increasing importance to New Zealand of Imperial and foreign affairs, nor to the desirability of as wide a dissemination of the facts as possible. It is clear that New Zealand, as an integral part of the British Empire, is vitally interested in anything that concerns that Empire. Nothing that affects Great Britain or any other portion of the British Commonwealth of nations can fail to concern in some degree the people of New Zealand, and the very fact that the Empire consists of so many widely-scattered communities is itself a sufficient reason why the British peoples should be kept closely in touch with affairs throughout the world.

With the growing responsibility of the Dominions in the shaping of Imperial policy, it is essential that the utmost publicity should be given to current movements in Imperial and foreign affairs.

A cardinal aim of the policy of the British Empire in world problems is the preservation of peace. In this policy it has nothing to conceal and nothing to extenuate, and nothing but a useful purpose can be served by giving the widest publicity to world movements in general, and their possible effect on the well-being of the Empire, and as to the attitude adopted on any question by the British Commonwealth. It is for this reason that the Prime Minister's Department is glad to place official information at the disposal of the public in New Zealand, and have accordingly been happy to agree to co-operate with the Broadcasting Company. For the same reason the British Official Wireless messages which are received daily in New Zealand direct from Rugby, are being placed at the disposal of the Company by the Prime Minister's Department, and will form part of the regular evening news items.

No attempt will be made in these lecturettes to offer advice or to guide public opinion in any other way than by the presentation to listeners of what may be accepted without question as reliable and authentic facts.

In view of the present public interest in the subject of Samoa, and of New Zealand's direct responsibility, the series will be inaugurated with a lecturette on the position of those Islands. It is proposed to explain as briefly and as fairly as possible, firstly, the complaints against the Administration, and, secondly, the Administration's reply. A short description of the Islands and of the Samoan people, and a very brief record of their history will introduce the subject.

The series will be continued weekly on the following subjects—Imperial Conference, Naval Disarmament, the Singapore Base, Imperial Communications, the New Hebrides, the League of Nations, China, and Egypt, while further articles on such subjects as Russia, Albania, Tangier, Italy, Iraq, India, Turkey, and current events as they arise from time to time, will, it is hoped, continue the series indefinitely.

These lecturettes will be delivered at the same time each week, and until further notice the time fixed will be 9 p.m. on Fridays. Any alteration in this time will be notified in these columns and by the announcer.

Any listener who may desire further information on any subject discussed, is cordially invited to communicate with the Broadcasting Company, which will arrange, if possible, to supply an answer through the Prime Minister's Department or otherwise.

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Wonderful 5-Valve Neutrodyne Set.
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Famed for Beauty of Design, Excellence of Workmanship, Mellow Tones, Volume and Power, Ease of Operation.

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WRITE NOW FOR INFORMATION.

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S. O. S.

INFORMATION WANTED

Someone posted a letter at "Port Nelson" containing our coupon for a subscription and postal notes for 7/6. But the coupon wasn't filled in. Will the sender please write and give name and address?

Also Master Buckton and A. H. Hayes have each sent 7/6 without giving their addresses. Would they please oblige with their addresses by return mail?

Many readers in sending subscriptions asked brief questions or made suggestions which we appreciate. Some of their suggestions have already been incorporated into our columns or covered in our second issue.

Will they please excuse a direct reply as we are fully submerged under a daily mail running into many hundreds of letters.

NOTE THESE POINTS.

The following facts will answer many individual inquiries regarding mail dispatches for

Special: Next Issue

WE HAD HOPED TO INCLUDE IN THIS NUMBER A SPECIAL ARTICLE UPON MR. IVAN O'MEARA, THE BRILLIANT GIBBORNE AMATEUR WHO SUCCEEDED IN THE FEAT OF PICKING UP, ON LOW-WAVE, THE BROADCAST DESCRIPTION OF THE RECENT DEMPSEY-SHARKEY FIGHT AND WAS THUS ABLE TO GIVE NEW ZEALAND THE FULLEST ACCOUNT OF THIS CONTEST.

OWING TO THE WEATHER INTERRUPTING MAILS, THIS ACCOUNT HAS BEEN DELAYED. IT WILL APPEAR NEXT WEEK.

distant points, to give programmes in good time for the following week.

1. We go to press with the bulk of our matter on Sunday evening.
2. We finally close our pages at midnight, Monday, and prepare for the printer.
3. Printing begins early Tuesday morning.
4. Wrapping is immediately proceeded with, mails caught throughout the day and southern and northern mails caught that evening.
5. The aim is to clear all dispatches from the publisher, at the office of "The Dominion" newspaper, by Tuesday evening.
6. With this prompt dispatch the "Radio Record" should be in the hands of readers even at distant points by Friday, the nominal date of issue, or at latest Saturday. The Postal authorities are co-operating very closely to secure prompt clearances.
7. As circulation grows, dispatches will be organised to serve distant points before the posting of papers for adjacent territory. The first possible mails will be caught.
8. Our columns are open to listeners for constructive suggestions, records of receptions, and items of interest and value. We are here to serve broadcasting.

A. J. HEIGHWAY,
Managing Editor.

P.O. Box 1032,
Wellington.

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EC

A Tube for Every Radio Need

RADIO'S FUTURE

MORE THAN ENTERTAINMENT

AN IMPORTANT REVIEW

The inauguration of a day-time broadcasting schedule on a nation-wide scale, comparable to the best features now transmitted between 8 p.m. and midnight, was forecast in an address recently at Hot Springs, Va., U.S.A., by George F. McClelland, vice-president and general manager of the National Broadcasting Company, at the annual meeting of the National Electrical Manufacturers' Association here. Probably 10,000,000 listeners would be added to the radio audience of the United States if a 16-hour day broadcasting service were regularly established, he said.

IN THE COMMENCEMENT.

"There is a good reason, of course, why radio should have settled first at the American fireside. It was brought into the home by the boy, and finally embraced by the man of the house. Then, too, the predominantly entertainment features of radio made it natural that the best programme features be concentrated during the hours when the family usually seeks entertainment," Mr. McClelland continued.

"But broadcasting has outgrown the narrow limits of its early experimental days. It has a greater destiny to fulfil than mere entertainment. Its mission to the home is to carry to it every form of cultural influence and service which this system of mass communication is pre-eminently equipped to do.

ABUNDANT SCOPE YET.

"Broadcasting, theoretically, at least, already covers the outermost limits of space. But it has still far to go in time before we may be said to have established the best possible broadcasting service commensurate with the requirements of a population of 117,000,000 people.

"Of the more than 30,000,000 women in this country over 21 years of age, less than 9,000,000 are employed in duties outside of the home. Radio broadcasting has made its start, it is true, in bringing a day-time service of information and entertainment to the home. Yet much remains to be done in order to provide an adequate day-time programme for 21,000,000 women in the United States, most of whom are anxious and eager to receive the musical, educational, and informative features which radio can bring.

RADIO FOR SCHOOLS.

"There are 25,000,000 school children in the United States, the vast majority of whom are still waiting an organised plan of service that will bring radio to the classroom as an established factor in musical education. The decision reached by Walter Damrosch, the distinguished dean of musical education in this country, to broadcast a series of educational concerts to the schools is a very great step in the right direction.

"It may seem an anachronism in this day of super-radio programmes when the greatest stars of the opera and the concert stage, when the most distinguished figures in educational and public life, have been featured on the air, that hundreds of thousands of people whose homes are equipped with radio sets have never had the opportunity to hear an outstanding radio programme. For we must remember that in many professions and many trades there are millions who labour while most of us sleep. Daytime broadcasting of a primary character would prove a great boon to this element of our population.

EFFECT ON RECEIVER SALES.

"The last, but not the least, factor that would call for the extension of daytime radio programmes is the need of the great buying public when it is in the market for radio sets. It is the unique position of radio that it is an industry built around a broadcasting service. It can be demonstrated only in connection with that service. The best possible reception of the poorest possible programme is an inadequate recommendation for any set. A high-class broadcasting programme, therefore, transmitted during the day hours would be of inestimable value to the radio industry.

"It is plain that any programme which advances the radio manufacturing industry advances the interests of broadcasting, and therefore the interests of the public."

GREAT TECHNICAL PROGRESS.

Mr. McClelland in his address also detailed the great technical progress made by engineers of the National Broadcasting Company in broadcast transmission.

"A new science of electro-acoustics has been created for broadcasting," he said. "Remarkable progress has been made in the technique of handling sound in the air.

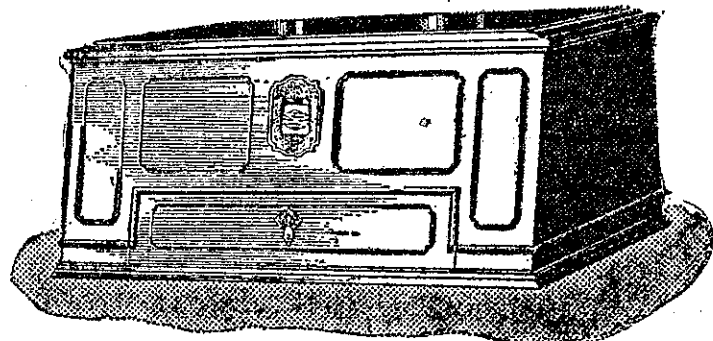
"Microphone technique has been improved to the extent that not only the middle register but the high notes of music or the speaking voice can now be handled by the microphone.

"Modulation systems have been worked out by which distortion in radio transmission practically has been eliminated.

"Sound control systems have been developed by which an invisible radio conductor mixes and controls the output of the microphone, so that a concert might be transmitted in perfect form by the broadcasting station."

The greatest contributions thus far to the development of broadcasting in the United States, Mr. McClelland declared, have been made by the communication, the electrical and radio manufacturing industries of the country.

BREMER TULLEY



Counterphase Eight

The SET THAT RECEIVED 27 AMERICAN STATIONS IN ONE EVENING.

THE SET THAT RECEIVED NEW YORK AND CHICAGO. THE SET THAT GIVES DAYLIGHT RECEPTION FROM AUSTRALIAN STATIONS.

THE SET THAT WILL GIVE YOU SATISFACTION. THE SET YOU WILL ULTIMATELY BUY.

READ what one of our Clients has to say about the "COUNTERPHASE EIGHT"

TAIHAPE, 13/5/27.

"With regard to the reception of Canberra Broadcast on the Counterphase Eight: The items were picked up by Mr. T. J. Smith, Colombo Street, Christchurch, in about 11.45 a.m. and picked up 2BE (Sydney) immediately. He heard them describing the Federal Hall and the position of the different statesmen. The band and procession announcing was heard quite clearly, and then the Duke's opening speech, followed by a bugle call. They listened to Sydney all the afternoon. Since then, Mr. T. J. Smith says, he can get Sydney any afternoon he tries. I have heard the set on one occasion, and New York and Chicago were just as clear as 1YA, Auckland. Mr. T. J. Smith says he picked up 27 American stations the first Sunday night he tried the set. I would not be surprised if he picks up London with the results he is getting."

Barnett's Radio Supplies, Upper Octagon, Dunedin.
Brahaut Bros., Stafford St., Timaru.
Hillman Bros., Alfred St., Blenheim.
Mack's Radio Ltd., 78-77 Kent Tce., Wellington.
F. H. Jellyman, Ltd., New Plymouth.
M. Ramson, Whakatane.
Radio House, Victoria Street, Hamilton.
Geo. Rickard and Co., Kaitake.

G. T. Gillies, Thames St., Oamaru.
J. I. Smith, Colombo Street, Christchurch.
G. Page and Sons, Ltd., Hardy St., Nelson.
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From the Woman's Point of View.

By VERITY.

How this life changes, and how enormously it has improved during the last century, and especially the last generation. Life is happier to-day than ever it was, and never, never has there been so great, so bright an outlook, nor so great a proportion of joy and contentment as there is now, in spite of the few dismal people who keep on telling us that we are degenerating, or words to that effect! Probably they would like us to return to mediaeval dirt and darkness.

But it is rather refreshing to pause and reflect, and realize that, after all, life is immensely livable, even fascinating and delightful for just about all of us. A man, once, who loved doing things just for the fun of doing them, got most frightfully keen on adding another accurate figure to the constant gravity of the earth. While he was amusing himself thus, he noticed the peculiar behaviour of quartz under certain conditions, and because of his observations then yet another new joy is added to this wonderful life of ours. All because an ordinary human being had sufficient intelligence to amuse himself with two metal balls suspended by delicate quartz fibres!

I wonder whether he realized what a tremendous influence his observations would have upon the whole world? Maybe he had a slight notion, but even in his wildest moments he could never have guessed how it would affect that very important person, who does the pulling of the most worth-while strings—the woman at home.

The subject thrills me! There is such a lot to be said about it, for to the home maker, the advent of Radio opens up many new sources of helpful information and advice, and as such is making a very special appeal. And what a wide range of subjects can be broadcast—as a matter of fact, almost everything that is dear to the heart of woman.

The problems of entertaining are becoming things of the past—they are being solved for us in no small measure. For what could be easier or more simple than to turn on a little switch and interest our friends in a brief but instructive lesson in Bridge—on "unblocking," for instance, or any of the many knotty points. Truly, devotees of this all-absorbing game will welcome these helpful little digressions if they can be arranged.

There will be certain to be entertaining discourses, too, on up-to-date furnishing and colour schemes, with a whole host of new ideas for beautifying our immediate surroundings. Cosy, intimate chats on health and

WHO WANTS TO WIN HALF-A-GUINEA?

Afternoon sessions are coming from 2YA—yes, in the very immediate future—and that means that broadcasting will make a specially intimate appeal to every home-keeper and home-maker. While our men are away at work—in office, shop, factory or field—we will have our leisure and our own special session of items of interest. And 2YA is so powerful that it will reach, even by daylight, to all parts of the Dominion; so here we have our longed for opportunity—a common social hour, as it were.

The Editor has entrusted me with this corner to convey to you the plans and prospects of service to you by broadcasting; to indicate briefly what is contemplated. But I am told to go further. I have to find out from you your points of view, what you expect and hope to get from this new service. So here's a penny for your thoughts—only it's half-a-guinea for the best concise letter of some 500 words or so outlining "What I want from Radio." I want letters from just all sorts—country and city—for we have to share our time and meet all needs. Just as Radio is to be of service to you, so the "Radio Record," too, is to be your field for expression, the suggestion box for the better development of our broadcasting time. And each week we will discuss here some subject. Now, who wins the first half-guinea? Use a nom-de-plume. Closing date (to give distant friends as much time as possible), August 13.

Yours in friendship,—Verity.

P.O. Box 1032, Wellington.

beauty—so inseparable are these two that it is impossible to have one without the other—will be an important service rendered, and a veritable joy to all enthusiasts, to whom will be revealed the means to achieve the much desired ends of health and beauty.

There are talks coming, too, in the afternoon sessions, on cookery, with suggestions for menus, and new sidelights on this all-important accomplishment. The harassed housewife will no longer reiterate her time-



MISS RITA RAFFILLS

is the possessor of a pleasing, rich, contralto voice, and is a star performer at 4YA. Miss Raffills takes part in many of the leading concerts in Dunedin.

worn question of "What shall we have to-night?" She will be relieved



MADAME MARJORIE CADMAN,

whose beautiful rich voice will be heard from 4YA on Sunday, August 28, in a recital, received her musical education at the Guildhall School of Music in London, under Garcia. She secured a Corporation Scholarship for three years in succession, her studies including elocution, acting grand opera, and light opera. Madame Cadman toured extensively for Stolls, and has sung on the leading concert platforms in England and on the Continent. She has resided in Dunedin for the past two years, where she occupies a prominent position as a teacher of voice production.

of the constant tax on her ingenuity and originality—Radio will decide for her! And just think how fascinating it is going to be to mix and make a pudding under the immediate instructions of the loud speaker! And won't it be convenient to have some unprotesting person to blame for our failures, too!

Lectures on Women's Institutes, telling us of the many useful home industries and handicrafts to be learned through them—mothercraft in its many phases, too, are certain to be subjects that will find a large number of eager listeners.

To the country woman, wireless is proving itself to be a priceless boon. She will no longer feel that she is living at the back of beyond. Things that have hitherto been out of the question, on account of distance and inaccessibility, will be brought right to her own fireside. She will know how the world is wagging and consequently have wider and fuller interests in life. In bringing the outside world into her home, Radio is doing much towards dispelling that sense of loneliness and remoteness, which is, in a greater or lesser degree, the lot of every sojourner in the country. She will no longer wonder what the shop windows are displaying in town, and make hazy speculations as to the shape of this season's hat, or the new cut of coats. Talks on fashions will be given by experts with detailed instructions for cutting out and making up of all kinds of home-sewing. What a tremendous help this is going to be!

And for the lovers of music away in the wilderness of—How often have they not longed to hear songsters, other than the birds, or music from the fingers of a master? But distance again was the inevitable barrier. Wireless has removed the obstacle, and there will be no more sighs of regret at having missed a

golden opportunity of hearing a great artist.

Then there is the little old lady who spends most of her time at home now. The weather, so often, is none too good, and she is not able to walk far. What a miraculous thing wireless is to her! Once, many years ago, she was very fond of life, and loved going out to concerts, but now she has nothing much to do all day but write letters and sort out her little treasures that she keeps so fondly to remind her of the past.

Now she can once more hear the



SINGER FROM THE MIDLANDS.

Mrs. Bingham Puddey, mezzo soprano, is an acquisition to the roll of artists at 3YA. She hails from Leicester where, as a soloist, she sang much for charity and at public functions. She is always welcome on a 3YA programme.

music she loved so well, and how her dear old face lights up at the sound of one of the old favourites. In listening to the voices of life, the days somehow seem not so long and lonely.

There is no end to my visions of service—but I want yours! Tell me your thoughts (as outlined in the panel above), and let us together make our combined service the joy and benefit it should be—Verity.

ELECTRIC STOVES

HINT ABOUT USE

Some interesting points on the use and management of the electric cooker were set forth by Miss Mildred Trent (who is in charge of Beath's Tearooms, Christchurch) in a recent talk "on the air" from 3YA. She maintained that the heat produced by electricity was the most perfect of any for cooking purposes.

The electric range (says Miss Trent) in the ordinary household size has a roomy oven equal to, if not larger, than the oven of a range or gas cooker, and this oven is heated by two elements, one for the top and the other for the bottom. Each element has three heats, H—M—L, and the heat in use is plainly shown by means of a disc; each element works independently of the other, and each is put into action by turning a knob. The oven is fitted with a thermometer which does away with all uncertainty, since if, say, a heat of 450 degrees is necessary, it is at once possible by just glancing at the thermometer to see that degree has been attained before beginning to use the oven.

Distribution of Heat.

The heat is evenly distributed, so that things are evenly browned, consequent-

ly cakes, scones, meat, etc., never have to be turned round, and when cooked can be taken out of the oven without ever having been moved. Care, however, must be taken to ensure this even browning by not putting the top shelf too near the top element, about five grooves from the bottom gives the best result. Slip trays, that is, trays slightly smaller than the oven, should be used, as they more quickly slip in and out and give the best results. For cooking meat an ordinary baking tin, the one that the housewife has always used, is all that is required. For the purpose of roasting or grilling a bright tray is provided with the range. This tray must be kept bright, so that the heat is reflected, and not absorbed, and it should never be used for any other purpose.

Methods of Cooking.

The toasting and grilling is done by using the top element of the oven only. Turn the current on about 10 minutes beforehand, put the things to be toasted or grilled on the bright tray, and put it in the oven fairly near the element and turn when necessary.

For boiling, stewing, steaming, frying, in fact for all other methods which are usually done either on the top of the range or on a gas ring, elements are used varying in number, size, and material according to the size and make of the stove. Each of these elements is separately controlled by its own nob, and like the oven elements has three heats—high, medium, and low.

Economising Current.

The "medium" uses half the amount of current than the high, and the low half the amount of current of the medium.

It will therefore be realised that the more the heat can be used on "low" the less will be the bill for current, and I should like to say here and now that the cost of running the range is entirely dependent on the one using it.

"I heard of one consumer who was most pleased at the result of his wife's cooking by electricity until the bill came in, and then there were fireworks! The meter was tested, the range was tested, and as a last resource the wire was asked to explain how she used it.

"Oh," she said, "it's very easy. I just turn the elements on to full and leave them on till the things are cooked!" Thereby, of course, using three times more current than necessary.

There are many ways of economising current, some of which are: (1) Seeing that all the saucepans used completely cover the element, so that all the electricity centred in that element is utilised; (2) by doing a quantity of baking the same day instead of heating the oven for perhaps one batch of scones; (3) by using triangular saucepans, three of which fit on the one element, and once brought to the boil can be kept simmering at "low" as long as necessary.

Your Questions Answered.

"Now to answer some of the questions I invariably get asked. What would I do if the current went off? To this there is only one answer—"Do without;" for without current the stove is useless, but as a consolation I would tell you that in the nine years we have been using it in the cake kitchen at Beath's only once, and that during the snowstorm of 1918, have we been inconvenienced by this happening.

Take a moral from the story of the old man who, when he was dying, called his children round him and said to them, "In my long life I've had many troubles—most of which never happened."

"Then again I get asked—'Is it as hot as coal or gas?' Quite, once the elements get hot, but it does take a little longer on a cold element, but certainly not as long as waiting to light a fire and get the stove going, and then boiling the kettle. For really quick boiling a separate utensil in the shape of a jug which will boil one pint in two minutes, three pints in 6 minutes, can be procured, and nothing could be quicker than that.

Service and Reliability.

"Electricity, I may tell you, is the best servant possible. It has no moods, is willing and ready to work any time of the day or night, never answers back, and always does its work quietly and consistently.

"If anything boils over will the element be spoilt? Certainly not! If you have the saucepan covering the element, as you should do, anything boiling over will merely boil on to the top of the stove, whence it can easily be wiped off, but even if some did go on the element the only inconvenience would be the nasty smell.

"There are no products of combustion to clean off the saucepans, the heat is evenly distributed over the element so that no part of the pan is getting more heat than the other, and therefore the saucepans wear evenly and of course any sort of saucepans can be used as long as they are large enough to cover the elements.

"There is no smell, no dust, and a perfectly clean uninvited atmosphere for the cook to work in, and best of all the range is not affected by draughts, so that in summer all doors and windows can be left open while cooking is going on. They say 'a woman is as old as she looks,' but if she has electricity for her servant there is no need for her ever to look old.

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Twist Your Neck and Stir Your Thyroid!

The thyroid gland, said Mr. Kerr, is situated across the throat just at the Adam's Apple, and its influence upon the body is extensive. For instance, if the gland is not functioning properly, atrophy, lack of bodily nourishment and a form of idleness is the result. Goitre is the most common disorder of the thyroid gland. I want to mention particularly this evening its rejuvenating and replenishing influence upon the body, for this would seem to be the object of the operation popular in Vienna.

In a previous talk, when dealing with the influence of thought and mind, I quoted experiments which proved the power we possess in directing the blood stream—the quality of which is secured from the deep breathing exercises—to any part of the body. If we can stimulate the glands through the influence of thought, mind and muscle, we have a much safer procedure with equally good results, minus the risk, and trip abroad, within easy reach. There are many glands in the body all of which may be stimulated in this way. The principal thing is to first become familiar with their position in the body, and if possible, their shape and function. That one may focus successfully upon them.

The thyroid gland in the throat is connected by an isthmus dividing the gland, the greater portion of which lies on either side of the windpipe, just below the "apple," and is in shape like a butterfly with open wings.

Muscles of the Neck.

However, I am rather more concerned with the influence of the muscles upon the glands and organs of the body, their exercise and development, and I would therefore remind you again, that we can bring the blood to any part of the body by exercising the muscles in the part or locality desired; thus the glands or organs, as the case may be, are supplied with good red blood.

The muscle now under consideration the platysma myoides, is one of the many muscles of the neck, which on to make up a good strong plump neck when properly developed. Such a neck is enviable in a man and much coveted because it is always a sign of great strength and vitality, courage and character. The bull neck of the professional wrestler, and footballer, the plump neck of our Jack Tars points to a clean athletic life and a strong and

By properly developing your neck muscles you may stimulate your thyroid glands and save a special trip to Vienna for rejuvenation purposes. Further, the inroad of goitre may be checked by timely and full exercise of all neck muscles. These are some of the points made by Mr. Norman Kerr, Director of the Garryowen Institute of Physical Culture, in a talk recently from IYA.

splendid physique. You will understand, of course, that I make a distinction between fatty, useless tissue and the firm, healthy muscular tissue of the 100 per cent. man.

How to Exercise the Neck.

Fill up your collar with good strong muscle. To do this, whenever you think of your neck in these terms, try to foreshorten your neck by pulling your head down into your collar, making your neck short and thick, hold it down for a few seconds, then draw your head backwards, do not lift your chin, and whilst working keep your abdomen forward, pressing against your belt. This will counteract the harmful tendency of pulling the stomach in, relax slowly and repeat; make your head vibrate with the tension of the contraction; count aloud, or pant—you require all the oxygen you can secure. This will overcome the harmful practice of holding the breath. Presently you may try the wrestlers' bridge, taking the weight of your body on your head; do so before you get out of bed: I can recommend this stretch. Draw in your feet by bending your knees; now shorten your neck by bringing your head down where the pillow meets the bed, now everything ready, lift your hips as far up away from the bed as possible, assisting with your elbows, several times. This will make you very strong. One of my exhibition stunts consisted in swinging a man from my neck. He would interlace his fingers at the back of my neck, and whilst I turned on my feet he would be swung right out, round and round.

While walking try and keep your neck curved out to meet your collar stud; do not permit any other curve to exist either in your mind or in reality. Remember the back collar stud for strength.

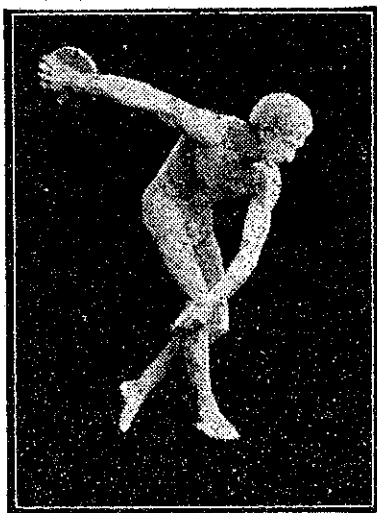
Beautiful Necks for Ladies.

Ladies and girls, I have not forgotten whilst dealing with my own sex that you may not be interested in muscle and brawn, and the production and development of the kind of necks I have been describing. Yet it is said that

women admire a strong and handsome escort. Your interest and appreciation, your "barracking" in our play and games is an incentive which you will not deny us; other men, too, like a strong man, for "all the world loves a lover."

The strong neck in man has its counterpart in the beautifully moulded neck of woman, with its delicate curves and lines, suggesting subtle strength, her dignity of carriage and bearing as the head is poised gracefully erect, giving an air of ease and assurance, beauty, charm, and majesty—an expression of health and vitality.

Unfortunately, in contrasting the ideal with the average, we find many necks that cause their owners a lot of worry and anxiety. Evening frocks



cannot be worn to advantage because of the "salt-cellars," the "bonnet strings," the bones, and the sharp prominent "Adam's apple" all stand out so, and together with the present fashion in "bobbed" hair make one's neck look so scraggy. There is a general desire for the high neck dresses to come in again.

It is noticed that the peasant women of some of the countries on the Continent and in some of the towns at home, possess beautiful poise and carriage, and lovely necks. On closer observation we notice the cause which brings about this desirable condition. These people use their necks; they subject them to daily exercise by carrying everything upon their heads. Baskets of fish and turf which take two people to lift into position seem to be easily poised and carried.

Balancing Weights on the Head.

Should I leave you now you would have an excellent suggestion as to how to proceed. Make a small crown for your head by winding material round and round, a ring until you have sufficient to fit the top of your head and thick enough to act as a cushion, thus keeping the weight from direct contact with your head; everything ready, hoist your little bag of sand, a brick, couple of books—anything offering a reasonable weight—into position. It should not be too heavy at first. Remember that as your strength increases you can always increase the weight. However, it must be sufficiently heavy to give you an opportunity to balance. Now you are ready for your route march—up and down the stairs, up and down the hall—anywhere except perhaps the main street—keep breathing deep down, also keep your eyes their own level and looking straight to the front. It will be found helpful to keep the mental picture of the condition you are working for, the object of your exercise, before you, and that you may thoroughly impress any on-lookers that you are really mad, repeat this statement: "Day by day, in every way, I grow more and more healthy."

Now to return to the platysma myoides, the muscle under consideration, for, as well as the foregoing suggestion, in which all the neck muscles are involved, these muscles must also be exercised individually. I would just intimate other exercises. The head may be drawn backwards and sent forwards, rolled round the shoulders right

and left, turned from side to side, stretched from side to side—i.e., an attempt is made to lay your head on your shoulder without turning your face (without looking around).

The Reward of Exercise.

It will be found necessary, for thoroughness, and to ensure rapid progress, to consider other muscles situated in the upper part of the trunk. Thus I would mention the shoulder muscles, those on the top of the arms on the points, the deltoids. These lift the arms out sideways from the body. On top you have the trapezius, towards the back between the points of the shoulders and the neck. These shrug your shoulders. The pectoral, or hugging, muscles, on the chest in front, function the arms as indicated across the body. These are antagonised by the shoulder-blade muscles behind, these pulling the arms back and down. As all these muscles are developed by exercises they become bigger and better, and in their development they converge so that the hollows under consideration are obliterated, and all unsightly angles are reduced.

It is easy to command the larger muscles of the body, and direct their influence upon the joints, but when it comes to waking up smaller muscles that have, perhaps, been lying dormant for a long time, a considerable amount of concentration and coaxing with patience is required, for the ultimate movement and control of the muscle is really the result of improved nerve supply from the connecting part of the brain recently caused to function. Your reward will be: control, more blood supply to the part, and more health and efficiency.

A mirror will be found most helpful here in securing contraction of the platysma myoides. Watch intently the skin around your throat, try and stretch it by pulling your neck, as it were, out from a very tight collar. As you hold the skin tightly, point your chin out up and forward, now to the right and left side. Do not keep the strain on all the time; drop into relaxation after each effort and alter your facial expression. It will be found helpful in securing movement to draw back the angles of your mouth, i.e., stretch the angles of your mouth towards your ears; welcome the smallest movement in the muscle, when the mechanical action may be reduced.

Distant Hills Look Green—But Are They?

Here, in Australia, complaints are rife about the broadcasting by the "wonderful" Commonwealth stations. Evidence is not wanting that in some areas the mighty "A" class stations are giving wretched reception, and the vagaries in some districts seem to baffle all experts.

I hear that the New Zealand stations are subject to "fading" in some portions of the Dominion, but as far as I can gather the trouble is not nearly so pronounced as with the Australian stations as reported from some inland towns. All kinds of theories are being advanced to account for some places being more affected than others, but in the meanwhile broadcast listeners who are paying for a service and are not receiving it are up in arms.

The much-extolled 2FC, Sydney, and its brother, 2BL, Sydney, are blurred and distorted in the Maitland district, only 100 miles from Sydney, and cannot be received at night-time at all satisfactorily.

One of the Sydney wireless journals has received numerous complaints of poor reception of the Australian "giant" stations, and has published a selection of these. The following letters will serve as examples:—

SOME SELECTED COMPLAINTS.

Dear Sir,—When 2FC were on their long wavelength their night transmission was excellent, but since they have been on the lower wave it is impossible to listen to them. During the daylight the transmission is perfect, but at night they distort and break up. This is the experience of all of whom I have made inquiries in Lithgow, and if it were not for the excellent transmission from 3LO and 4QG we would get little joy out of radio. It may be said that Lithgow is not a good place for radio reception, but I can assure you that this is not correct.

I was hoping that ere this something would have been done to clear up 2FC's transmissions, for if 3LO and 4QG can give satisfaction on a low wave, surely it is not impossible for a large station like 2FC to do likewise.

The pooriness of their night transmission is doing a great deal of harm to the radio industry in the country districts, especially in this locality, as the majority of people listen-in in the night time and when they cannot get their

The appended article from "ex-Maorilander" is interesting in presenting the other side of the picture regarding broadcasting in the Commonwealth. We print it merely to show that there is this other side and not in any desire to obtrude such complaints regarding others—complaints which undoubtedly are due to causes at present beyond station control.

(By "Ex-Maorilander.")

local stations, the query is: "What's the good of having a set?" This question of poor transmission should not be beyond the power of 2FC's engineers, who could satisfy themselves that something is very much amiss if they took a trip to the various localities from whence the complaints arise.—Yours, etc.,

Lithgow.

"RADIO."

SOUTH QUEENSLAND.

Dear Sir,—The transmission from 2FC in this district has not been up to their old standard since their wavelength was shortened. We now cannot get a sound from them in the daytime, whereas they used to come in at great strength; in fact, on a five-valve set they were clearly audible 200 yards away.

This, of course, means that we have no daylight service, and has had a very adverse effect on sales in this area, as 4QG in addition to giving practically no day service, is very weak and frequently quite unworkable before dark.

This, of course, means no demonstrations during the day, and I may mention that not one night in the past ten has 4QG been workable, owing to static, which is not bad as a rule until sunset. In fact, the shortening of 2FC has had a most disastrous effect both on the dealers' business and the number of new licenses taken out.

NO DAY SERVICE.

There is constant reference to the small number of sets in the country. I assure you that until the country is able to get a day service this is likely to remain the case, as what chance has the dealer of making sales when it is impossible to demonstrate? Putting the matter plainly: How many sets would be sold in the cities if the deal-

ers were unable to let the possible purchaser hear a set working?

I have sets from 3 to 8 valves in stock, and am quite unable to demonstrate for day after day.

In the case of the country dealer this is particularly serious as the possible purchasers from the sheep and cattle stations are frequently not in town more than one night a month, and in many cases on their occasional visit they clear out again before dark.

2BL is peculiar, as at times their strength is tremendous, and at other times no stronger than 2GB. Also, for half an hour at a time they are horribly distorted at times, then clearing up again.

4QG fades a lot here, and 3LO is strong and clear usually, and is easily the favourite station in this district.—Yours, etc., F. E. Smith, Roma, Queensland.

MAITLAND

(100 miles from Sydney).

Dear Sir,—I have experienced distortion with 2FC and 2BL ever since 2FC changed their wave-length. It is quite impossible to get these stations clearly at night. I have tried several receivers to get Sydney stations, and I am reluctantly forced to tune-in to inter-State stations. I find that every listener in the Maitland district and coal-fields is having the same trouble. Could not something be done in order to give this district a better service? Otherwise I and many others will be compelled to cancel our licences.—Yours, etc., DISAPPOINTED, Morpeth.

Dear Sir,—As a constant reader of "Wireless Weekly" I feel disgusted when I read of excellent reception overseas of 2BL and 2FC, yet the Maitland district, only 100 miles from Sydney,

cannot receive these stations at nighttime satisfactorily at all, both stations being very blurred and distorted.

It does not seem fair for hundreds of listeners in this district to maintain these stations by paying a licence fee and get this unsatisfactory service, whilst overseas listeners pay nothing at all and get excellent reception.

Is it any wonder that country licences are not increasing to the extent that they should. If some of the staff were to come to this district and hear the reception of their respective stations, I am sure they would not broadcast again.—Yours, etc., DISGUSTED, West Maitland.

NEWCASTLE.

Dear Sir,—I am very much disap-

pointed in the transmission of 2BL and 2FC at night-time.

In the daytime they are really good, but as soon as night falls, it is nearly impossible to listen to them, yet 3LO, Melbourne, and 4QG, Brisbane, are nearly perfect at night.

As there are so many complaining about 2BL and 2FC, I think the only way out of the difficulty is to erect relay stations where the reception is bad.

Some time ago I read, in a Newcastle paper, where 2BL and 2FC were going to erect relay stations in Newcastle. Yet now it seems as if they have forgotten all about it. I think if a relay station was erected in Newcastle, there would be about twice as many more licences around Newcastle and Maitland, and in the long run it would pay for itself, and there would be a lot more satisfied listeners.—Yours, etc., J.B., New Lambton.

KUNGHUR.

Dear Sir,—I am situated about 400 miles from 2BL and 2FC, and find that they "come-in" excellently. Daylight reception is almost impossible with a three-valve set, but at night the reception is very good.

Perhaps it would be better for correspondents to blame district conditions rather than the transmission from these A class stations. Such things do occur. I think the stations have been too long in the game to make such a mistake as faulty transmission.—Yours, etc., R.B., Kungahur, Far North Coast.

NEW ZEALANDERS NOT TO GRUMBLE.

It can be seen from these letters that everything in the garden is not beautiful over here. New Zealanders who are disposed to grumble about the fading of the Maoriland stations should pause before rushing into print, seeing that the Australian Broadcasting which they hold up as a paragon suffers the same disabilities in some districts.

The proprietors of the Australian stations could promptly disprove the veracity of the above letters by test, but they know too well that the complaints are well founded.

CONFIRMED BY EXPERTS.

Experts have already toured the country, testing the receiving conditions in certain districts, and their reports appear to confirm the allegations embodied in the complaints. The N.S.W. Premier, Mr. Lang, has lent an ear to the protesters, and he has stated that his Government purposes erecting a high-power "A" class station in Sydney which will be linked with smaller relay stations erected in country districts, to provide a satisfactory service for those who are at present unable to receive the present transmission.

Convicts of the Pennsylvania Eastern Penitentiary, their identity hidden by their numbers, broadcast a radio programme recently through two eastern stations. The outstanding song hit was a Chinese solo by the only Oriental in the prison, which was announced as "I Wish I was in Pekin Peekin' In, Instead of In Here Peekin' Out." Another interesting number was "Eli, Eli," in Hebrew.

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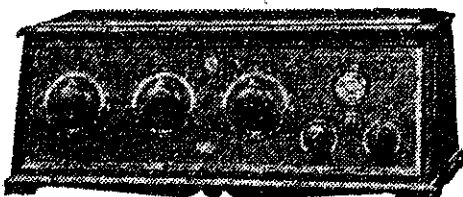
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Full Programmes for Next

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1YA FEATURES

THE SAXOPHONE BAND

This unique combination of twenty saxophones will be heard at 1YA on Tuesday, August 9. This band takes the whole of the musical portion of the Rev. Lionel B. Fletcher's services held at the Majestic Theatre. The band is composed of high-grade artists in their own particular line, and an interesting and unusual entertainment should result. An assisting artist will be Mr. Peter Dawson, who will recite "If We Only Knew" and "My Beastly Eyeglass."

THE LYRIC FOUR.

The well-known and popular Lyric Four, assisted by Miss Alma McGruer, will appear at 1YA on Wednesday



MR. ARTHUR E. WILSON,

organist, Auckland, whose recitals at church services and elsewhere have given marked pleasure.

evening, August 10. The "Lullaby" at 9.57 will be sung by the company, and will be an innovation as regards the Lyric Four, who rarely sing other than as a quartet. The members of the Lyric Quartet are: Messrs. A. Ripley, H. Richards, A. McElwain, and E. Thomas.

BIG NIGHT FOR 1YA

FINEST PROGRAMME YET

The concert to be given on Thursday, August 11, will undoubtedly be the finest ever broadcast from 1YA. It has been prepared by the Aeolian Orchestra, one of the city's leading amateur musical organisations.

The vocalists will be Miss Ina Thompson and Mr. Walter Brough. Miss Thompson is a contralto of conspicuous ability. She has sung for the Auckland Choral Society, Bohemian Orchestra, Municipal Band, and Royal Male Choir. She was champion lady vocalist at the Auckland Competitions in 1926, and at Napier the same year. This will be her first appearance before the microphone. Mr. Walter Brough's fine baritone voice is well known to and popular with listeners.

The Aeolian Orchestra first came into existence six or seven years ago as the "Auckland Amateur Musical Club." Starting in a small way, it grew rapidly under the able conductorship of Mr. W. Edgar Webb, a musician of extensive English and colonial orchestral experience. Two years ago the concert hall of the orchestra was changed from the Grafton Library to the Town Hall, where it now performs regularly. The Aeolian Orchestra at present has a membership roll of 53 players, and is the second largest combination of its kind in Auckland. It aims to play music of a classical calibre in addition to the more popular type of music.

The classics are well represented on the programme to be given, while the popular taste will be catered for in the "Ravmond" overture and selections from Gilbert and Sullivan's "Mikado."

For the information of listeners the following notes on the numbers to be played are given:—

The "London Symphony."

The "London Symphony," by Haydn, consists of four movements, the first of which will be played; (a) Adagio and Allegro: Opens in slow, stately style, with marked contrasts of tone, leading into the sprightly Allegro, which contains difficult runs and quick-bowing passages for strings, with wind bringing in attractive counter-melodies.

Francis Joseph Haydn (1732-1809), most distinguished of Austrian composers, gained his great command of composition largely without technical guidance. After holding various high musical posts in the Courts of Europe, Haydn twice visited England with the violinist Salomon, in 1791 and 1794. It was in London (Continued outside column next page).

Station 1YA, Auckland

(WAVE-LENGTH 333 METRES).

MONDAY, AUGUST 8.

SILENT.

TUESDAY, AUGUST 9.

6.30 p.m.: Children's session—Aunt Betty.
7.15 p.m.: News and information session.
7.30 p.m. to 7.45 p.m.: Talk on "Wireless," by Mr. E. W. Mahoney.
8 p.m.: Chimes.
Relay of overture from Majestic Theatre; Mr. J. Whiteford-Waught, conductor.
Bass solo—Mr. Peter Dawson, (a) "In God's Own Keeping" (Thompson), (b) "Royster Doyster" (Goldstein).
Saxophone band—Auckland Saxophone Band, (a) "Invercargill March," (b) "Moonglade."
Saxophone duet—Messrs. Pickering and H. Kingsland, "O Sole Mio" (Di Capua).
Baritone solo—Mr. J. Bree, "Pagan" (Lohr).
Saxophone solo—Mr. E. Pickering, "Humoresque" (Dvorak).
Saxophone quartet—Messrs. Kingsland, Bowman, O'Malley, and Pickering, "Smiles and Chuckles."
Band—Auckland Saxophone Band, "Evening Thoughts."
9 p.m.: Weather report.
Relay from Majestic Theatre.
Band—Auckland Saxophone Band, (a) "Triumphal March" (Bennett), (b) "Blushing Rose."
Elocution—Mr. P. Dawson, (a) "If We Only Knew" (Spurr), (b) "My Beastly Eyeglass" (Reynolds).
Duet—Messrs. Pickering and Kingsland, "Excelsior."
Quartet: Messrs. Kingsland, Bowman, O'Malley, and Pickering, "Miserere" from "Il Trovatore" (Verdi).
Baritone—Mr. J. Bree, (a) "When Spring Comes to the Islands" (Lohr), (b) "Invictus" (Kahn).
Band—Auckland Saxophone Band, (a) "Local Pride March," (b) selected.

WEDNESDAY, AUGUST 10.

7.15 to 7.45 p.m.: News and information session.
8 p.m.: Chimes.
Relay of overture from Prince Edward Theatre—Mr. Geo. Poore, conductor.
Quartet—Lyric Quartet, "Dance of the Gnomes" (McDowell).
Bass solo—Mr. Ernest Thomas, "Blow, Blow, Thou Winter Wind" (Ketilby).
Tenor solo—Mr. H. Richards, "Longing for You" (Fisher).
Soprano solo—Miss A. McGruer, "Comin' Thro' the Rye."
Humour—Mr. A. McElwain, some humour.
Operatic scena—Miss A. McGruer and Lyric Quartet, scena from "The Bohemian Girl" (Balfe).
9 p.m.: Weather report.
Relay from Prince Edward Theatre.
Quartet—Lyric Quartet, "Girl of Mine."
Soprano solo—Miss A. McGruer, "Spring Dropped a Song."
Duet—Messrs. McElwain and Thomas, "The Gendarmes."
Tenor solo—Mr. A. Ripley, "My Molly, Dear."
Quartet—Lyric Quartet, "Peggy."
Humour—Mr. A. McElwain, more humour.
Bass solo—Mr. E. Thomas, "Hybrias the Cretan" (Elliot).
Quartet—Lyric Quartet, "Kentucky Babe."
Concerted item—Miss A. McGruer and Lyric Quartet, lullaby.

THURSDAY, AUGUST 11.

7.15 p.m.: News and information session.
7.30 to 7.45 p.m.: Talk on "The Garden," by Mr. E. H. Skeates.
8 p.m.: Chimes.
March—The Aeolian Orchestra, "Gladiator's Farewell" (Blanckenberg).
Overture—The Aeolian Orchestra, overture to "Raymond" (Thomas).
Baritone solo—Mr. Walter Brough, "Casey the Fiddler" (Wood).
String piece—Aeolian Orchestra, "Frühlingsgruss," (Schinzel), violin obbligato by Mr. N. Watson.
Selection—Aeolian Orchestra, selection from "The Mikado" (Sullivan).
Contralto solo—Miss I. Thompson, "Sapphic Ode" (Brahms).
Symphony—Aeolian Orchestra, First Movement from "The London Symphony" (Haydn).
9 p.m.: Weather report.
Orchestral—Aeolian Orchestra, (a) "Nachtstucke" (Schumann), (b) Pizzicati from "Sylvia" (Delibes).
Baritone solo—Mr. Walter Brough, (a) "The Stockrider's Song" (James), (b) "Comrades of Mine" (James).
Selection—Aeolian Orchestra, selection from "La Traviata" (Verdi).
Intermezzo—Aeolian Orchestra, "Jours Passes" (Horne).
Contralto solo—Miss I. Thompson, (a) "Ships that Pass in the Night" (Stephenson), (b) "Dreaming of Home" (Besley).

March—Aeolian Orchestra, "Grand March" from "Tannhauser" (Wagner).
Conductor of orchestra, Mr. Edgar Webb; leader, Mr. F. M. Price; hon. accompanist, Miss Maida Hooker, A.R.C.M.

FRIDAY, AUGUST 12.

6.30 p.m.: Children's session—Tom Thumb.
7.15 p.m.: News and information session.
7.30 to 7.45 p.m.: Talk on "Motoring," by Mr. Geo. Campbell.
8 p.m.: Chimes.
Relay of concert from Messrs. John Court's, Ltd.
Soprano solo—Miss E. Bentley, "Thou Whose Leafy Shade" (Handel).
Bass solo—Mr. D. Black, "The King's Own" (Bonheur).
Contralto solos—Miss M. Green, (a) "When Daisies Pied" (Arne), (b) "Sometimes in Summer" (Bennett).
Soprano solo—Miss E. Bentley, "One Fine Day" from "Madame Butterfly" (Puccini).
Bass solo—Mr. D. Black, "Yeomen of England" (German).
Contralto solo—Miss M. Green, "The Leaves and the Wind" (Leoni).
Duets—Miss Bentley and Mr. Black, (a) "Parted" (Tosti), (b) selected.
9 p.m.: Weather report.
9.1 to 10 p.m.: Organ recital—Mr. A. E. Wilson.

SATURDAY, AUGUST 13.

7.15 p.m.: News and information session.
7.30 to 7.45 p.m.: Talk on "The Care of Your Car," by "Gargoyle."
8 p.m.: Chimes.
Relay of overture from Strand Theatre—Eve Bentley conducting.
Baritone solos—Mr. W. J. Meredith, (a) "A Rose and You" (Stoneham), (b) "The Treasure."
Violin solos—Mr. P. Rogers, (a) "Souvenir" (Drdla), (b) "Barcarolle" (Offenbach).
Griffiths Duo—Popular numbers.
Baritone solo—Mr. W. J. Meredith, "Hine a Hine" (Terangipai).
Violin solo—Mr. P. Rogers, Scottish selections.
Griffiths Duo—Popular numbers.
9 p.m.: Interval. Sports results and weather report.
9.5 p.m.: Relay of dance music from Dixieland Cabaret by The Internationals, under Mr. Clyde Howley.

SUNDAY, AUGUST 14.

6.55 p.m.: Relay of church service from Baptist Tabernacle. Preacher, Rev. Joseph Kemp; organist, Mr. Arthur E. Wilson.
8.30 p.m.: Relay of Municipal Band from Town Hall. Conductor, Mr. Chris. Smith.

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SUNDAY, AUGUST 7.

6.55 p.m.: Relay of St. Andrew's Presbyterian Church. Preacher, Rev. F. E. Harry. Subject: "Troubles That Never Come."
8.15: Relay of band concert of the Port Nicholson Silver Band from the Grand Opera House. Conductor, Mr. J. J. Drew.

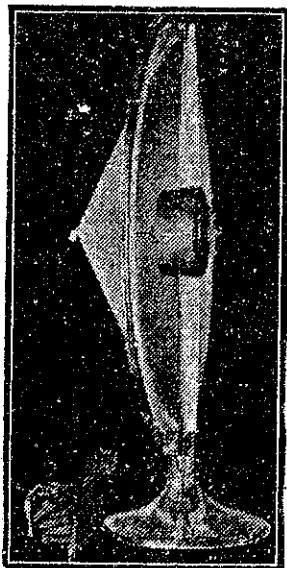
MONDAY, AUGUST 8.

7.15 p.m.: News and market reports. Sporting results.
8.0: Chimes of the G.P.O. clock, Wellington.
8.6: Orchestral—Studio Orchestra, "Snowflakes" (Thiele).
8.11: Bass—R. H. Dellow, "Vulcan's Song" from "Philemon et Baucis" (Ch. Gounod).
8.16: Cello solo—E. Lilla Hill, "Lauchetto" (Mozart).
8.21: Soprano solo—Miss Myra Sawyer, "Musetta's Song" ("La Boheme"), (Puccini).
8.26: Orchestral—Studio Orchestra, "Coronach" (Edgar Barrett).
8.31: Lecturette, "The Treatment of the Polynesian Races by the British Empire"—Sir Robert Stout.
8.41: Tenor solo—Arthur C. Clarke, "Sigh No More" (Aitken).
8.46: Violin solo—Miss Ruth Reid, "Romance" (Beethoven).
8.54: Contralto—Miss A. McDavit, "Oh Se tu Dormi Svegliate" (Bacaj).
8.59: Clement May, "Studies from Dickens."
9.9: Orchestral—Studio Orchestra, "Pizzicato Arabesque" (Fanchetti).
9.16: Soprano—Miss M. Sawyer, "The Doll's Song" from "Tales of Hoffman" (Offenbach).
9.21: Cello solo—Miss E. Lilla Hill, "Slumber Song" (Squire).
9.27: Bass—R. H. Dellow, "She Alone Charmeth My Sadness" from "Irene" (Gounod).
9.32: Violin solo—Miss Ruth Reid, "Spanish Dances, No. 3" (Sarasate).
9.40: Contralto—Miss A. McDavit, "Plasin D'Amour" (aria), (Giovanni-Martoni).
9.45: Tenor solo—Arthur C. Clarke, "Fairy Song" (Rutland-Boughton).
9.48: Orchestral—Studio Orchestra, "Bonne Promenade."

TUESDAY, AUGUST 9.

7.15 p.m.: Lecturette, Mr. T. C. Brash, "The Development of the Dairy Industry."
8.0: Chimes.
8.1: Studio Orchestra, "La Belle Pierette" (Fowles).
8.7: Vocal quartet—The Waiata Quartet, "All in the April Evening."
8.11: Violin—Mr. Desmond Lavin, "Govatina" (Raff).
8.15: Vocal duet—Mrs. L. A. MacAlister and Miss Joy Sutherland, "Nocturne" (Denza).
8.19: Cello—Mr. C. Proctor, "Consolation."
8.23: Vocal quartet, Waiata Quartet, "Londonderry Air."
8.27: Piano—Studio pianist.
8.41: Vocal duet—Mrs. L. A. MacAlister and Miss Joy Sutherland, "I Wish I Were a Tiny Bird."
8.45: Instrumental—Studio Orchestra, "Told at Twilight."
8.51: Tenor—Mr. Eric Rishworth, "Where e'er You Walk" (Handel).
8.55: Contralto solo—Miss Hilda Chudley, "I Love Thee" (Grieg).
8.59: Weather report.
9.0: Instrumental—Studio Orchestra, "By the Tamarisk" (Coates).
9.13: Vocal quartet—Waiata Quartet, "Evening Lullaby."
9.17: Violin—Mr. Desmond Lavin, "Rondino" (Kreisler).
9.21: Tenor—Mr. Eric Rishworth, "The Wanderer" (Schumann).
9.26: Contralto—Miss Hilda Chudley, "Deep River" (Burleigh).
9.30: Cello—Mr. Chas. Proctor, "Wieglulied" (Hanser).
9.34: Vocal quartet—The Waiata Quartet, "Evening Pastoral."
9.38: Baritone—Mr. B. Stokes, "Sonny Lad."
9.42: Piano—Studio pianist.

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9.47: Mezzo-soprano—Mrs. L. A. MacAlister, "Stay With Me, Summer."
9.51: Baritone—Mr. S. Stokes, "Dream Tryst."
9.54: Contralto—Miss Joy Sutherland, "Home Song."
9.58: Instrumental—Studio Orchestra, "Morceau de Concert."

WEDNESDAY, AUGUST 10.

SILENT.

THURSDAY, AUGUST 11.

7.15 p.m.: News session and market reports.
7.30: Lecturette, Mr. W. King, D.B.A.E., "Esperanto."
8.0: Chimes of the G.P.O. clock, Wellington.
8.1: Relay of the Paramount Theatre Orchestra, under the direction of Mr. R. R. Caulton.
8.16: Band—1st Battalion, Wellington Regiment, "Naworth Castle March" (O. Hume).
8.21: Tenor—Mr. E. W. Robbins, "An Evening Song" (Blumenthal).
8.26: Band—1st Battalion, Wellington Regiment, "Echoes of Scotland" (fantasia), (Rimmer).
8.38: Bass—Mr. G. Neal, "The Lute Player" (Allitsen).
8.42: Cornet—Lieutenant J. B. Sharrow, "The Amateur" (Greenwood).
8.47: Contralto—Mrs. D. A. Herbert, "Lie There, My Love" (McCunn).
8.51: Band—1st Battalion, Wellington Regiment, "Prelude-Rachmaninoff" (Rimmer).
8.56: Soprano—Mrs. M. Taylor, "Come Back to Erin" (Claribel).
9.0: Weather report.
9.1: Band—1st Battalion, Wellington Regiment, march, "Joy of Life" (Moorhouse).
9.8: Relay of the Paramount Theatre Orchestra, under the direction of Mr. R. R. Caulton.
9.23: Contralto—Mrs. D. A. Herbert, "Break o' Day" (Sanderson).
9.27: Trombone—Bandsman W. Matson, "The Firefly" (Moss).
9.32: Soprano—Mrs. M. Taylor, "We'd Better Bide a Wee" (Claribel).
9.36: Band—1st Battalion, Wellington Regiment, "Rigoletto" selection (Verdi).
9.43: Bass—Mr. Geo. Neal, "My Old Shako" (Trotter).
9.53: Band—1st Battalion, Wellington Regiment, "Stars and Cross" (Lathgow).
10.0: Close down.

FRIDAY, AUGUST 12.

7.15 p.m.: News session and market reports.
7.30: Lecturette—Mr. T. Fletcher, "Rugby Football."
8.0: Chimes of the G.P.O. clock, Wellington.
8.1: Instrumental—Studio Orchestra, waltz, "Yellow Butterflies" (Eoons).
8.7: Soprano—Miss F. Barry, "Arise, O Sun" (Day), "Trees" (Rasbach).
8.11: Flute—Mr. L. Rothwell, "Nightingale" (Donjon), "Andaline" (Pessard).
8.16: Baritone—Mr. P. Hinge, "The Ragged Vagabond" (Randolph).
8.20: Piano and organ duet—Mrs. F. Peyton and Mr. C. Howe, "Tannhauser" (R. Wagner), selection (Mrs. Kennedy).
8.27: Contralto—Miss F. Dencker, "An Island Shelling Song" (Fraser).
8.31: Violin—Miss C. Hope Flaws, "Perpetuo Mobile" (Bohm).
8.36: Tenor—Mr. J. Cathcart, "Bonnie Wee Thing" (L. Luchman), "The Scent of the Lilies" (Haynes).
8.40: Instrumental—Studio Orchestra, "Eastern Romance" (Haynes).
8.46: Lecturette, "Imperial Affairs." Contributed by Prime Minister's Department; read by the Editor-Announcer.
8.56: Instrumental—Charles Dalton's Columbian Solo Six, "Hi, Diddle, Diddle," "My Cutie's Due" (Original).
9.6: Flute—Mr. L. Rothwell, "Butterfly" (Koehler), "Joyous Bird" (M. Phillips).
9.11: Soprano—Miss F. Barry, "You in a Gondola" (C. Clarke).
9.15: Piano and organ duet—Mrs. F. Peyton and Mr. C. Howe, "Ave Maria" (Schubert).
9.22: Baritone—Mr. P. Hinge, "Blow, Blow, Thine Winter Wind" (Sargeant).
9.26: Instrumental—Studio Orchestra, "Joy and Sadness" (Besalosse).
9.34: Contralto—Miss F. Dencker, "Johnnie" (V. Stanford).
9.38: Violin—Miss C. Hope Flaws, "Waltz" (C. Taylor).
9.42: Instrumental—Studio Orchestra, "Redzi Intermezzo" (Caludi).
9.48: Tenor—Mr. J. Cathcart, "Macushla" (McMunah).
9.52: Instrumental—C. Dalton's Columbian Solo Six, "Sunday," "So Blue" (Reginal).

SATURDAY, AUGUST 13.

2.30 p.m.: Relay—Description of football match, Athletic Park.
7.15: News session and sports results and market reports.
8.0: Chimes of the G.P.O. clock, Wellington.
8.1: Instrumental—Studio Orchestra, "Ludcia Intermezzo" (Caludi).
8.6: Piano-forte—Mr. F. Andrews, original, "Hop, Scotch Schottische" (S. Rose).
8.11: Concertina—C. Pritchard, "Bells of St. Mary" (E. Adams).
8.16: Humorous songs—Mr. A. Chalk, "The Vicar's Fancy Dress Ball" (N. David and A. Lee).
8.22: Instrumental—Studio Orchestra, "Gavotte" (Lardelli).
8.27: Banjo duet—London Bros., "Tune Tonic" (E. Grimshaw).
8.32: Piano-forte—Mr. F. Andrews, original.
8.37: Concertina—C. Pritchard, "Il Bacio".
8.42: Humorous song—Mr. A. Chalk, "House Hunting" (G. Squires).
8.47: Banjo duet—London Bros., "Tattoo" (E. Grimshaw).
8.52: Instrumental—Studio Orchestra, "No. 2 of Three Dream Dances" (C. Taylor).
9.4: Lecturette—C. E. Wheeler, "Parliament—A View from the Inside." Relay Charles Dalton's Columbian Solo Six Dance Orchestra.

Station 3YA, Christchurch

SUNDAY, AUGUST 7.

6.30 p.m.: Relay from Trinity Congregational Church of youths' service, to be attended by members of Y.W.C.A. and Y.M.C.A. Address by Rev. Gardner-Millar. Subject, "There's a Long, Long Trail a Wind-ing." Musical items by the choir.
8.0: Sacred concert and organ recital by the choir. Organist, Mr. Raynor White; musical director, Mr. Fredk. Penfold.

MONDAY, AUGUST 8.

6.30 p.m.: Children's session, by Uncle Sam.
7.15: News and reports.
7.30: Talk by Mr. E. J. Bell, librarian, Public Library, Christchurch, on "Books."
8.0: Chimes. Concert of band music by Christchurch Municipal Band, under direction of Mr. A. J. Schnack, assisted by vocal soloists.
March—Band, "Entry of the Gladiators" (Frick).
Soprano solo—Miss Khura Stewart, "Heart of Gold" (Manney).
Bass solo—Mr. W. J. Salkeld, "Will o' the Wisp" (Cherry).
Selection—Band, "Dawn of Spring" (Le Duc).
Mezzo-soprano solo—Miss Violet Lapsley, "The Pipes of Pan" (Elgar).
Comic recitation—Miss Lily Kinsella, "Questions and Answers" (M.S.S.).
Overture—Band, "Austral" (Bulch).
Tenor solo—Mr. Thomas Wall, "My Sweetheart When a Boy" (Morgan).
Hymn—Band, "Nearer My God to Thee" (Mason).
Soprano solo—Miss Khura Stewart, "Pluck this Little Flower" (Ronald).
Waltz—Band, "April Buds" (Auchliffe).
Interval.
March—Band, "Argandab" (Thomson).
Bass solo—Mr. W. J. Salkeld, "The Deathless Army" (Trotter).
Soprano solo—Miss Violet Lapsley, "Bird of Love Divine" (Wood).
Euphonium solo—Bandsman J. Simpson, "El Capotelette" (M.S.S.).
Musical monologue—Miss Lily Kinsella, "The Picture Pianist" (playing own accompaniment), (M.S.S.).
Air—Band, "Sandon" (M.S.S.).
Tenor solo—Mr. Thomas Wall, "The Toilers" (Piccolomini).
Selection—Band, "Knight Errant" (Trussel).
Bass solo—Mr. W. J. Salkeld, "We Sway Along the Ridges" (Mallinson).
March—Band, "B. B. and C. F." (Hume).
Close down.

TUESDAY, AUGUST 9.

11.30 a.m.: Special session. Description of progress of the Canterbury Jockey Club's Grand National Steeplechase meeting.

WEDNESDAY, AUGUST 10.

11.30 a.m.: Progress Metropolitan Trotting Club's meeting at Addington.
6.30 p.m.: Children's session, under Uncle Jack.
7.0: Close down.
7.15: Addington stock market reports and news and reports.
8.0: Chimes. Relay of orchestral selections from Everybody's Picture Theatre Orchestra, under direction of Mr. W. J. Bellingham, F.S.M.
Bass solo—Mr. J. Filer, "Drake Goes West" (Sanderson).
Soprano solo—Miss Mabel Eaglesome, "When the Heart is Young" (Buck).
Cornet solo—Mr. E. N. Trenberth, of Woolston Quartet, "Neath Austral Skies" (P. Code).
Tenor solo—Mr. E. Rogers, "Lorraine" (Sanderson).
8.30: Talk by Rev. B. Dudley, F.R.A.S., on "Astronomy."
Baritone solo—Mr. Jack Mason, "The Lute Player" (Millitsen).
Instrumental trio—Mr. Woodward's Instrumental Trio, popular melodies (M.S.S.).
Bass solo—Mr. J. Filer, "Anchored" (Watson).
Euphonium solo—Mr. T. H. Hughes, of Woolston Quartet, "Silver Showers" (Rimmer).
Soprano solo—Miss Mabel Eaglesome, "Comin' Thro' the Rye" (anonymous).
Brass instrumental quartet—Woolston Instrumental Quartet, Messrs. T. H. Hughes, G. Wilson, E. N. Trenberth, S. Creagh, "Wagner" (Hume).
Tenor solo—Mr. E. Rogers, "Island of Dreams" (Adams).
Baritone solo—Mr. Jack Mason, "The Bells of Clermont Town" (Goodhart).
Instrumental trio—Mr. Woodward's Instrumental Trio, popular melodies (M.S.S.).
Bass and tenor duet—Messrs. J. Filer and E. Rogers, "The Rivals" (Hastings).
Soprano solo—Miss Mabel Eaglesome, "I'm Longing for the Spring" (Morris).
Brass instrumental quartet—Woolston Instrumental Quartet, "Town and Country" (Round).
Baritone solo—Mr. Jack Mason, "For the Green" (Lohr).
Relay of orchestral music from Everybody's.

THURSDAY, AUGUST 11.

11.30 a.m.: Description of Canterbury Jockey Club's meeting at Riccarton.
7.15: News and reports.
7.30: Lecturette, under auspices of Canterbury Progress League, on "Pig Production and Feeding" by Mr. M. J. Scott.
8.0: Chimes. Relay of orchestral selections from Liberty Picture Theatre Orchestra, under direction of Mr. Ernest Jamieson.
Bass solo—Mr. F. E. W. Cossins, "Because" (d'Hardelot).
Soprano solos—Miss Marjory Miller, (a) "A Little Coon's Prayer" (B. Hope), (b) "Down Here" (Brahe).
Clarinet solo—Mr. S. E. Munday, "Tenth Air Varie" (Thornton).
Tenor solos—Mr. G. M. Fawcett, (a) "The Shepherd's Song" (Elgar), (b) "The Oyster" (Eisdell).
Piano solos—Mrs. P. H. Davey, L.A.B., (a) "Wanderer's Night Song" (Rubenstein), (b) "Valse, Op. 39, No. 8" (Brahms).
(Continued on next page.)

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IYA FEATURES.

(Continued from p. 8.)

don that he wrote and produced with the Philharmonic Orchestra this symphony. Personally, he was genial, humorous, industrious; musically, "Papa" Haydn is recognised as the establisher of the classical school. His advice to young composers—to make sure first of having an air or melody—is strongly reflected in his own works, about 1000 in number, including symphonies, concertos, chamber and keyboard music, and vocal works.

"Nachtstucke."

Robert A. Schumann (1810-1856), who composed "Nachtstucke" (Nocturnal Piece), belonged to the romantic school. His earlier musical life was devoted to attacking established customs; later, he became a thoughtful, cultivated, constructive critic. As a song writer, he is ranked next to Schubert. He wrote a great deal of music—orchestral and chamber music, piano, dramatic, and choral works and songs. The "Nocturnal Piece" was written originally for the piano.

"La Traviata."

Giuseppe Verdi (1813-1901), Italian composer, is one of the chief opera writers of modern times. He was of humble origin; but in 1842 "Nabucco" opened a long series of triumphs. In 1851-53, his second period opened with "Rigoletto," "Il Trovatore," and "La Traviata," all achieving instant international success. They represent the height of his inspiration. His third period includes "Aida," "Otello," and "Falstaff," the last written when Verdi was nearly eighty. The composer's exhibition of sustained musical advance stands unsurpassed in musical history. He had an abundant flow of melody, and to it added fresh devices of rhythm and harmony.

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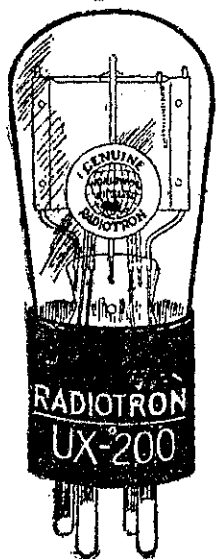
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cerpt from the opera "Tannhauser," which was written in 1845 and first produced in Dresden.

W. Richard Wagner (1813-1883) is by many counted the greatest of dramatic composers. His main musical work lay in the new theory of the opera he gave to the world. He reasserted the dramatic nature of the opera, and indicated the orchestra as the chief agency of expression, subordinating the craving of soloists. His operas include the following familiar works—"Rienzi," "Tannhauser," "Flying Dutchman," "Die Meistersinger," "Lohengrin," with many others. He wrote also orchestral, piano, choral, and vocal music, and several literary works on musical subjects.

(Continued on next page.)

Programmes Continued

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Contralto solo—Miss Dorothy Sharp, "There's a Big Lot of Sunshine Coming Soon" (Hay).
Cello solo—Miss Charlotte Carter, "Cavatina" (Squire).
Bass solo—Mr. F. E. W. Cossins, "Mother Machree" (Young).
Talk by Mr. Donald Grant, M.A., on "Youth Movement" (second series).
Relay from Liberty Theatre.
Soprano solo—Miss Marjory Miller, "The Bird With the Broken Wing" (Golson).
Clarinet solo—Mr. S. E. Munday, "Regrets d'Amour" (Bright).
Tenor solos—Mr. G. M. Fawcett, (a) "Serenata" (Leoncavallo), (b) "No! Punctinello, No More," from "I Pagliacci" (Leoncavallo).
Contralto solo—Miss Dorothy Sharp, "Bird of Blue" (German).
Cello solo—Miss Charlotte Carter, "None but the Lonely Heart" (Tschai-kowsky).
Piano solo—Mrs. P. H. Davey, L.A.B., "Moonlight Sonata, Op. 27, No. 21" (Beethoven).
Bass solo—Mr. F. E. W. Cossins, "The Veteran's Song" (F. Wetherley).
Soprano and contralto duet—The Misses Dorothy and Kathleen Sharp, "A Venetian Song" (Tosti).
Relay from Liberty Theatre.

FRIDAY, AUGUST 12.

11.30 a.m.: Description of Metropolitan Trotting Club's meeting at Addington.
7.15: News and reports.
8.0: Chimes. Relay of orchestral selections from Strand Picture Theatre Quartet, under direction of Mr. Harry Ellwood.
Bass solo—Mr. W. J. Richards, "I Am a Friar of Orders Grey" (Reve).
Mezzo-soprano solo—Miss Claris Holgate, "Wondering Why" (Clarke).
Tenor solo—Mr. W. Bradshaw, "Mona" (Adams).
Violin solo—Mr. Chas. McPeak, "Ave Maria" (Gounod).
Talk by Mr. J. K. Moloney on "Rugby."
Humorous recitation—Mr. C. Collins, "During the Interval" (M.S.S.).
Mezzo-contralto solos—Miss Jessie Ewart, (a) "Waiata Poi" (Hill), (b) "Pohare Kare" (Hill).
Piano solos—Studio pianist, (a) "Romance" (Rubenstein), (b) "Valse Tendre" (Chaminade).
Bass solo—Mr. W. J. Richards, "The Windmill" (Nelson).
Mezzo-soprano solo—Miss Claris Holgate, "Garden of Summer" (Forster).
Tenor solo—Mr. W. Bradshaw, "Yes! Let Me Like a Soldier Fall" from opera, "Maritana" (Wallace).
Violin solo—Mr. Charles McPeak, "Intermezzo" from opera "Cavalleria Rusticana" (Mascagni).
Humorous recitation—Mr. C. Collins, "No News" (M.S.S.).
Mezzo-contralto solo—Miss Jessie Ewart, "Waiata Maori" (Alf. Hill).
Piano solo—Studio pianist, "To the Spring" (Greig).
Mezzo-soprano solo—Miss Claris Holgate, "A Heart That's Free" (Robyns).
Tenor solo—Mr. W. Bradshaw, "Come Into the Garden, Maud" (Balfe).
Vocal duet—Miss Jessie Ewart and Mr. W. J. Richards, "The Voyagers" (Sanderson).
Relay from Strand Theatre.

SATURDAY, AUGUST 13.

11.30 a.m.: Description Canterbury Jockey Club's meeting at Riccarton.
2.45 p.m.: Description Payne Trophy Rugby match at Lancaster Park.
6.30: Children's session, by Uncle Jack.
7.15: News and reports.
7.30: Sporting results.
8.0: Chimes. Relay of orchestral selections from Grand Picture Theatre Orchestra, under direction of Mrs. Black.
Humorous solo—Mr. Peter Thomson, "The Caretaker's Daughter" (M.S.S.).
Siffleur—Mr. A. Mizen, popular airs.
Mezzo-soprano solo—Miss Betty Millar, "Bonny Banks of Loch Lomond" (anon.).
Zither-banjo solos—Mr. Jack Oxley, (a) "White Coon's Polka" (Payne), (b) "Bye, Bye, Blackbird" (Henderson).
Humorous solos—Mr. C. O'Connor, (a) "Hi, Ho! The Merrio" (Conrad), (b) "My Cutie's Due at Two-to-Two" (von Tilzer).
Siffleur—Mr. A. Mizen, popular airs.

1YA (CONTINUED)

SPRING COMES: "THE GARDEN."
A talk on "The Garden" is to be given by Mr. E. H. Skeates at 1YA on Thursday evening at 7.30.

FOR MOTORISTS.

Mr. George Campbell will continue his lectures on "Motoring" at 1YA on Friday at 7.30 p.m.

On Saturday, at 7.30, "Gargoyle" will speak about "The Care of Your Car."

SATURDAY NIGHT CONCERT.

Mr. D. Black, Miss E. Bentley, and Miss M. Green, all popular singers at 1YA, are providing the first half of the programme at Auckland on Friday, August 12. The concluding part of the evening's entertainment will be an organ recital by Mr. A. E. Wilson.

The Griffiths Duo will provide their share of the fare on Saturday evening at 1YA. Other artists will be Mr. W. J. Meredith (baritone) and Mr. P. Rogers, a violinist, who appears frequently, and is always enjoyed by listeners. The evening's dance music will come from the Dixieland Cabaret, played by the Internationals under Mr. Clyde Howley.

SUNDAY SERVICES.

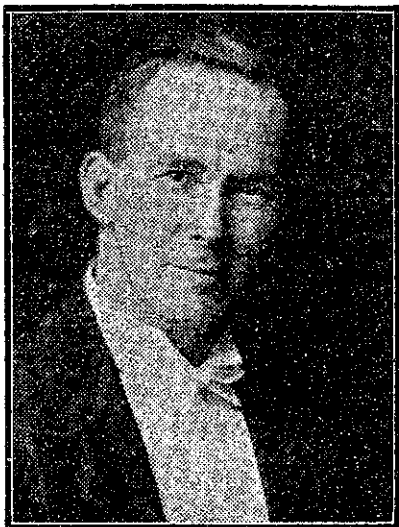
The service at the Baptist Tabernacle, where the preacher is the Rev. Joseph Kemp, will be broadcast by 1YA on Sunday evening, August 14. The organist at the Tabernacle is Mr. A. E. Wilson. Afterwards will follow a relay of the Municipal Band concert in the Town Hall.

2YA FEATURES

INTERESTING TALKS

FINE MUSICAL PROGRAMMES.

"Troubles That Never Come" is the title of the Rev. F. R. Harry's address at St. Andrew's Presbyterian Church on Sunday evening, August 7. Afterwards a concert given by the Port Nicholson Silver Band in the Grand Opera House will be broadcast. Miss Myra Sawyer, who delighted all listeners with her singing on the opening night of 2YA, is to sing again on Monday, August 8. Her items will be "The Musette Song," from "La Boheme," and "The Drill Song."



—S. G. Dobson, photo.
MR. EDWIN DENNIS.
(Singing at 2YA.)

Mr. Edwin Dennis is one of the foremost New Zealand tenors. He has a voice of the heroic type, which he uses to excellent advantage. He has performed at Queen's Hall and Central Hall, London, throughout Australia, and for practically every Choral Society in New Zealand.

from "Tales of Hoffman."

Mr. Roy Dellow (bass), who has done much singing on the concert platform, will appear at 2YA on Monday, August 8. He will sing "Vulcan's Song" and "She Alone Charmeth My Sadness." Mr. Arthur Clarke, an English tenor whose work is conspicuously artistic, will also sing. The instrumental section of the programme will include cello contributions by Miss Lilla Hill, a talented player producing a beautiful voice, and violin solos by Miss Ruth Reid, a first prize winner at the Wellington competitions.

Listeners to this concert on August 8 will have the pleasure of hearing again Mr. Clement May, the well-known Dickensian artist and elocutionist. He will be heard in "Othello's Address" (Shakespeare); "Daniel Pegoty" (from Charles Dickens' "David Copperfield"); and "The Cynic."

A DAIRY ADDRESS.

From 2YA on the evening of August 9 Mr. F. C. Brash, secretary to the New Zealand Dairy Control Board, will talk on the development of the dairying industry. This will be the first of a series of lectures which should prove of deep interest to all who are in any way associated, directly or indirectly, with the making and marketing of butter and cheese.

THE WAIATA QUARTET.

The Waiata Quartet, winners of the Wellington Competitions on two or

Mezzo-soprano solos—Miss Betty Millar, (a) "Always" (Berlin), (b) "Yearning" (Davis and Burke).
Zither-banjo solo—Mr. Jack Oxley, "Rompie Rosie" (Rossiter).
Humorous solos—Mr. Peter Thomson, (a) "The Egg" (Henson), (b) "Glasgow Town" (Fyfe).
Relay of dance music from Caledonian Hall, by arrangement with Mr. Reg. Stillwell.

Station 4YA, Dunedin

(WAVE-LENGTH 463 METRES.)

SUNDAY, AUGUST 7.

6.30 p.m.: Relay of service from Knox Church. Preacher, Rev. Tullock Yuille, M.A., B.D.; organist, Mr. W. Paget Gale.
8 to 9 p.m.: Studio concert.

MONDAY, AUGUST 8.

SILENT.

TUESDAY, AUGUST 9.

3 to 4.30 p.m.: Afternoon concert.
Town Hall chimes.
His Master's Voice recital.
Address by Miss M. Puechegud, on "Interior Decoration."
Studio items.
Book talk by Mr. H. Greenwood, librarian, Dunedin Athenaeum.
His Master's Voice recital.
7 to 7.30: Children's session—Aunt Diana's Sister.
8 to 10: Town Hall Chimes. Relay of concert from the Dunedin Trades Hall.
8.45: Address by Pastor W. D. More, "Ghost Stories."

THURSDAY, AUGUST 11.

7 to 8 p.m.: Town Hall chimes.
Request gramophone concert.
8 to 10 p.m.: Town Hall chimes.
Studio concert by the pupils of Madame Marjorie Cadman, assisted by others, and orchestral selections relayed from the Empire Theatre, under direction of Mr. Chas. Parnell.
Mezzo-soprano solos, (a) "Rose of My Heart" (Lohr), (b) "Dearest, I Bring You Daffodils," Miss Violet Waldren.
Violin solo—Selected from "Il Trovatore" (Verdi), Mr. A. J. Frye.
Contralto solos, (a) "Kashmiri Song," (b) "Till I Wake" (Woodforde-Finden), Mrs. M. Wilson.
Cello solo—Selected, Mr. A. Bonner.
Bass-baritone solos, (a) "The Bandolero" (Stuart), (b) "Little Irish Girl" (Lohr), Mr. Paul Couchman.
Orchestral selections from the Empire Theatre.
Soprano solos—(a) "Flower Song" from "Faust" (Gounod), (b) "God Touched a Rose" (Brown), Mrs. J. Brock.
Address on "Petrolium," by "Gargoyle."
Light vocal solo, "Some Other Bird Whistled a Tune," Mr. V. Cadman.
Vocal duet—"Sincerity," Miss J. Bills and Mrs. Wilson.
Violin solo, "Rondino" (Kreisler), Mr. A. J. Frye.
Baritone solos—(a) "Lighterman Tom," (b) "Stone-cracker John," Mr. J. Brock.
Cello solo, selected, Mr. A. Bonner.
Mezzo-soprano solos, "Song Cycle" (Coningsby-Clarke), Miss J. Bills.
Orchestral selections from the Empire Theatre.
Light vocal solos—(a) "I'm Telling the Birds," (b) "Are You Sorry," Mr. V. Cadman.
Soprano solos—(a) "The Star" (Roger), (b) "One Fine Day" (Puccini), Mrs. J. Brock.
Violin solo—"Minuet" (Paderewski), Mr. A. J. Frye.
Bass-baritone solos—(a) "Harlequin" (Sanderson), (b) "Santa Barbara" (Russell), Mr. Paul Couchman.
Vocal duet—"The Day is Done," Miss Bills and Mrs. Wilson.
Orchestral selections from the Empire Theatre.
Baritone solos—(a) "Four Jolly Sailors," (b) "Young Tom o' Devon," Mr. J. Brock.

FRIDAY, AUGUST 12.

3 to 4.30 p.m.: Afternoon concert.
Town Hall chimes.
His Master's Voice recital.
Afternoon tea music from the Savoy.
Humorous reading by Mrs. I. W. Cowie.
Studio items.
Music from the Savoy.
His Master's Voice recital.
7 to 7.30: Children's session—Aunt Diana's Sister.
8 to 10: Studio concert.
8.45: Address under auspices of W.E.A.
9.0: Dance music by Ern. Beacham and his orchestra from the Savoy.

three occasions, will be "on the air" from 2YA on the evening of August 9. Of this combination of mixed voices Mr. Bennet North, of Sydney, declared that this was one of the best quartets he had ever heard.

Altogether quite an attractive combination of talent will face the microphone on this evening, and a well-balanced vocal and instrumental programme is assured. Mr. Desmond Lavin, a competition prize-winner and leader of Mr. De Mauny's orchestra, will be the solo violinist; Mr. C. Proctor will be heard on the cello; the studio pianist will contribute a solo number, while the orchestra will present three melodious selections. On the vocal side there will be the Waiata Quartet, duets by Mrs. McAlister and Miss Joy Sutherland; a tenor solo by Mr. Eric Rishworth; and a contralto solo by Miss Hilda Chudley. Both Mr. Rishworth and Miss Chudley are very pleasing singers.

BRITAIN IN POLYNESIA.

With more than half a century's personal observation and as a deep student of the history of the native races of Oceania, Sir Robert Stout will speak at 2YA on Monday, the 8th, on "The Treatment of the Polynesian Races by the British Empire." The subject is an engrossing one, especially at the present time, and a survey of the bright—as well as some black—spots which have marked Britain's dealings with the natives of the Pacific during the last hundred years or so will be impartially given by the judicial mind of New Zealand's ex-Chief Justice.

STIRRING BAND MUSIC.

Some stirring music will be broadcast from 2YA on Thursday evening. In addition to a couple of relays from the Paramount Theatre Orchestra, the Band of the 1st Battalion Wellington Regiment will be "on the air," in both full strength and solo numbers. The conductor, Lieutenant J. B. Sharrow, is a brilliant cornetist, while Bandsman W. Matson is a proved exponent of the trombone. The vocalists will be Mr. E. W. Robbins, one of

Wellington's foremost tenors and a competition gold medalist; Mr. G. Neal, bass, whose fine voice has been heard previously; and Mrs. D. H. Herbert, contralto; and Mrs. M. Taylor, soprano, two new singers, so far as radio is concerned, whose voices under audition gave promise of successful achievement.

FRIDAY EVENING VERY INTERESTING.

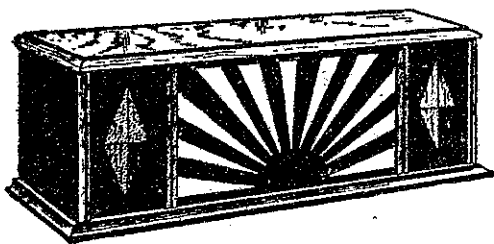
Followers of Rugby will listen with interest to Mr. T. Fletcher's talk during the early evening session, while later (according to schedule, at 8.46) will follow the editor-announcer's second lecture on Imperial affairs. Of instrumental music there will be a plenitude, covering a wide range of orchestral selections, piano and organ duets, and flute and violin solos, to say nothing of the novelties to be provided by Charles Dalton's Columbian Solo Six. Here should be variety pleasing to all tastes. The lady vocalists will be Miss F. Barry, soprano, who has been favourably received by Wellington audiences, and Miss F. Dencker, a singer reputed of much promise. Mr. P. Hinge, baritone, is a new singer possessed of a voice of good quality, while the tenor for the evening, Mr. J. Cathcart, was one of the soloists in the recent presentation of "The Desert," by the combined choirs of Wellington and Dunedin.

A BRIGHT SATURDAY NIGHT.

"Merry and bright" will be the keynote of Saturday's broadcast from 2YA. Not only will there be plenty of orchestral melody, but banjo and concertina will add their tuneful strains to the evening's harmony. The London Bros. will show listeners just what the banjo is capable of, while Mr. C. Pritchard will champion his favourite melody-maker—the concertina. Mr. F. Andrews, who has been described as a trick pianist, and has a vast repertoire upon which to draw, will also have something original and humorous to say per medium of the keys he so ably manipulates. Still another contributor will be Mr. A.

Opportunity

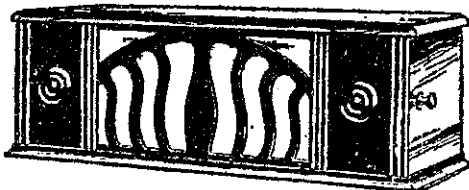
A GENUINE British made Amplion loud speaker with all the essential Amplion features—with the Amplion reputation and guarantee behind it, offered at the ridiculously low price of Fifty Shillings.



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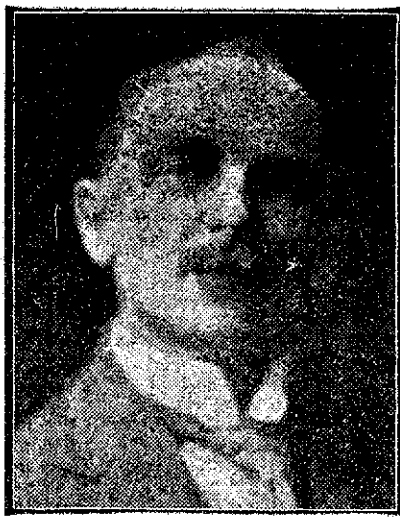
Attractive appearance, capability to give faithful reproduction with full volume and delightful tonal quality make it one of the greatest radio bargains ever offered. Call and hear it at your radio dealers

Get yours now!

Chalk, a humorous songster. It may be taken for granted, too, that Mr. C. E. Wheeler's lecturette on "Parliament: A View From the Inside," will not be lacking of the lighter vein. His talk will certainly be well worth hearing. The programme will conclude with a relay of Charles Dalton's Columbian Solo Six Dance Orchestra.

"HOW PARLIAMENT WORKS."

Mr. C. E. Wheeler, who has been in the Press Gallery for twenty years—



—Photo by S. P. Andrew.
the longest of any of the present members—will commence his series of addresses on Saturday evening, August 13. He calls his lectures: "Parliament: A View from the Inside," and as he is a very observant pressman with a long experience his chat should be very entertaining. The lecture is timed to start at 9.4.

CHRISTCHURCH

SOME INTERESTING TALKS

"There's a long, long trail a-wind-ing" is the theme for the Rev. Gardner Miller's address at Trinity Congregational Church on Sunday evening, August 7. A sacred concert and organ recital will follow.

A talk on "Books," by Mr. R. J. Bell, librarian at the Christchurch Public Library, is to be given at 8YA on Monday evening at 7.30.

A quarter of an hour's talk on Astronomy will be given by the Rev. B. Dudley, F.R.H.S., at 8YA on Wednesday at 8.30. This will be one of a series of such lecturettes.

Under the auspices of the Canterbury Progress League a lecture on "Pig Production and Feeding" will be given at 8YA on Thursday at 7.30 p.m. by Mr. M. J. Scott.

The second of the series of talks by Mr. Donald Grant, M.A., on the "Youth Movement" will be given at 8YA on Thursday evening, August 11.

Mr. J. K. Maloney, whose talks on Rugby are proving so popular at 8YA, will continue the series on Friday evening, August 12. The lecture is timed to start at 8.30.

MUSICAL FARE.

A number of young performers will be heard on Monday, August 8, which is band night at 8YA. A young elocutionist who is expected to surprise listeners is a little lady of 14, Miss Lily Kinsella. She has won many prizes at competitions. A young soprano to make her debut in radio will be Miss Khara Stewart. She, too, has been very successful in competitions. She is only 15, and has a most promising future. Miss Vera Lapsley, another very promising singer, is a mezzo-soprano. She is very young, too. She took part in Uncle Sam's first Sunday evening concert recently, and greatly delighted listeners. Other artists who will assist the band (the Christchurch Municipal Band, under Mr. A. J. Schnack) are Messrs. W. J. Salkeld (bass), and Mr. Thomas Wall (tenor).

WOOLSTON QUARTET.

The Woolston Instrumental Brass Quartet, composed of members of the well-known band, will play at 8YA on Wednesday, August 10, in concert and in solo items. The quartet comprises Messrs. T. H. Hughes (euphonium), G. Wilson (tenor horn), E. N. Trenberth (cornet), and S. Creagh (cornet). All are gold medalists, having competed at many band contests. This will be the first occasion on which the quartet will have appeared before the microphone. A treat is in store for listeners.

WEDNESDAY'S FAVOURITES.

Messrs. J. Filer and E. Rogers, bass and tenor respectively, who are always acceptable performers for radio, will be heard at 8YA on Wednesday evening, August 10. Miss Mabel Eaglesome (a very sweet soprano), Mr. J. Mason (a pleasing baritone), and the Woodward Trio (instrumentalists who will give popular items), are also on the programme. A number of favourite songs are to be sung, and the evening's concert promises to be most enjoyable.

SOME PROMISING NEWCOMERS.

Much talent will be heard at 8YA on Thursday evening, August 12. A new bass singer will make his appearance. This is Mr. F. H. W. Cossins, who has a rich, well-trained voice. Miss Kathleen Sharp is making her debut before the microphone. She is singing duets with her sister, Miss Dorothy Sharp, a nice mellow contralto, who is also singing solos. Mrs. P. H. Davey, pianist, who played at 8YA recently on the classical evening arranged by Mr. Percy Nicholls, will be heard again. Other artists who are contributing are Miss Marjory Miller (contralto), Mr. G. M. Fawcett

(tenor), Mr. S. E. Munday (clarinet), and Mr. A. Marston Bate (cello). These last-named artists are already well known and deservedly popular.

FRIDAY.

Some Maori songs will be sung at 8YA on Friday evening. The items will be the popular "Waiata Poi," "Pohare Kare," and "Waiata Maori." The singer will be Miss Jessie Ewart, a fine contralto. Miss Ewart will also be associated with Mr. W. J. Richards, a young bass singer of great promise, in a duet, "The Voyagers." Mr. Richards will sing "A Friar in Orders Grev" and "The Windmill." Miss Claris Holgate, who will appear in a studio concert for the first time, has a fine mezzo-soprano voice. Mr. W. Bradshaw (tenor) will be heard at his best in "Mona" and "Yes, Let Me Like a Soldier Fall" (from "Marianne"). Mr. C. Collins is a good reciter and will contribute some humorous items. Mr. McPeak is a talented violinist.

"POPULAR SATURDAY NIGHT."

There will be a "Saturday Night" programme at 8YA on Saturday. There will be appearing Mr. Jock Oxley and his zither band, and Mr. A. Mizen, sif-fleur, with popular items. Mr. R. O'Connor will be introduced to listeners as a comic singer, and Miss Betty Miller, a bright little mezzo-soprano, will make her first appearance in radio. Then there will be Mr. Peter Thompson in musical monologues and comic items. He appeared recently at 8YA in the Scotch night.

The phrase "on the air" does not suit the purists in radio parlance; but it is more appropriate in the case of one American mid-western station (WIBU, Poynette, Wis.), which derives its power, at least, out of the air. It is equipped with two windmills, which, through generators coupled to them, charge the storage batteries of the station. This is economical as well as novel.

DUNEDIN

A VARIED PROGRAMME

On Sunday, 4YA will broadcast the service from Knox Church, which will be attended by the teachers of the day schools of Dunedin. The Rev. Tullock Yuille, M.A., B.D., will be the preacher, his subject being, "The Emotion of the Ideal." Following the church service will be a studio concert.

Miss M. Puechegud and Mr. H. Greenwood will again be heard from 4YA on Tuesday afternoon.

GHOST STORIES.

Listeners are advised that Pastor W. D. More's address on Tuesday evening will take place earlier than usual, at 7.45 p.m. This time, Mr. More has chosen for his subject "Ghost Stories," so we may expect a bright little entertainment.

At 8 p.m. on Tuesday 4YA will relay a grand concert from the Trades Hall, when several leading performers of the southern city will be heard.

THURSDAY'S CONCERT.

The pupils of Madame Marjorie Cadman will be heard in another of their successful concerts from 4YA on Thursday next, when they will be assisted by Mr. A. J. Frye (violin), Mr. A. Bonner (cello), and the Empire Theatre Orchestra, under Mr. Chas. Parnell. "Gargoyles" will also give another interesting talk on "Petroleum."

THE W.E.A.

The Workers' Education Association at Dunedin are providing very interesting addresses at 4YA. And they will be broadcast on Friday evening.

IN THE SANATORIUM

WHAT RADIO MEANS TO THE BOYS.

(To the Editor.)

Sir,—I thought I would like to add my little praise to the new Wellington broadcasting station. First of all, I would like to mention the wonderful time the boys here had on your initial event, the Ranfurly Shield match. We have a big set here in the lounge, and on that day it was able to supply eight loud speakers and three sets of headphones. The loud speaker that was placed about 60 feet from my bed had about 20 of the boys around it, and they had a glorious time. "So did we on the veranda." Everything came through so clearly, even the announcer's remarks to the people near him: "Give me a chance and sit down in front." While the crowd were in an uproar. When the crowd cheered the boys cheered, and they could not have been more excited if they had been at Solway. I can tell you wireless is a boon to a sick man. I have a five-valve set here with me, but as I am away from an aerial I have to use quite a novelty in getting results. I have a piece of wire two feet long attached to the mattress I sleep on, for an aerial, and for earthing I have a piece of insulated wire attached to the conduit on the wall. I get wonderful results from 2YA, and I had the opening night through quite good, a little fading at times, but when I have had it going since it has been excellent.

I would like to mention I am very pleased with the first copy of the "N.Z. Radio Record," for which I am a subscriber, and I think it will fill a long-felt want. I wish you all future success.—Yours truly,
A. T. GRIFFIN.

RADIO IN CANADA

A BIG DEAL REPORTED.

A report from New York states that the Radio Corporation of America has confirmed the reported sale of the Canadian Marconi Company's business to Lazard Brothers and Company, the London bankers, but denies the report that the Radio Corporation, or any other American interests, would obtain control of the Canadian company.

It is understood that Lazard Brothers will form a holding company to run and operate the Canadian Marconi Company, in which the British Marconi Company and the Radio Corporation will hold stock.

The officials of the Radio Corporation said the report from London that the corporation would appoint a director on the Canadian board was untrue, and that the matter had not been discussed. [Lazard Brothers are a big firm of discount bankers.]

CHILDREN'S SERVICE

The children's service, which was successfully introduced at 8YA on a recent Sunday evening, is to be made a fortnightly fixture. The next service will probably take place on Sunday next, August 7, from 6 to 6.30 p.m.

ANSWERS TO INQUIRIES

G.C.M., Knox College, Dunedin.—Yes, the super-heterodyne is the only frame aerial that would cover your inquiry. Your best course, however, is to state your position fully to a local dealer, and accept his advice. The autotex circuit works wonderfully well on a small aerial of the type you desire, and is cheap to construct. We cannot satisfactorily cover all your questions in correspondence, and suggest your personal contact with a competent adviser.

"Listener-in," Matamata, suggests that squealing and howling in country districts would be eliminated by a competent dealer or listener installing a transmitting station and rebroadcasting, to enable crystal set users to get good reception. Yes, this can be done, provided you have the combination of enthusiasm and capacity on the part of some qualified person, as it would be necessary for him to be a licensed amateur transmitter, permission for which is procured from the Department, and he must pass an examination for a license to transmit. Some radio clubs now are broadcasting programmes on this basis.

W.J.B., Onehunga, makes a number of suggestions, some of which have already been adopted and incorporated in our columns. Others will be added as opportunity offers. It is impossible to publish a list of the small New Zealand stations, such as 12B, 12Q, etc., and their times, as these latter are generally irregular.

A PRESENTATION BROADCAST

What is probably the first broadcast of a presentation ceremony in New Zealand took place at the St. Paul's Presbyterian Church on Sunday evening last at Christchurch, when a presentation was made to Mr. Raynor White, who had been organist and choir-master for eleven years. The minister, the Rev. Bower Black, speaking in front of the microphone during the progress of the song service following the ordinary church service, expressed the congregation's regret at losing the services of Mr. White, and presented him with a wallet of notes. Mrs. White was also the recipient of a suitable gift. An audience of approximately 4000 listeners heard Mr. Black's remarks and Mr. White's reply. Mr. White will in future be the organist at the Trinity Congregational Church, Christchurch.

While Swiss listeners pay 12s. 6d. apiece a year for the privilege of listening, they evidently feel that they have received more than their money's worth. The director of the Berne station was invited at Christmas to pick himself out a motor car, and did so, without taking it seriously. On New Year's day, to his great surprise, it was delivered to him with the compliment of the audience of "Radio Berne." This station last year transmitted for 2100 hours, half the time being given to concerts, and one-fifth to talks.

Special Feature Next Week

A DEFINITE NEED FOR LISTENERS IN CHECKING THE RECEPTION AND RANGE OF THE DIFFERENT STATIONS IS TO HAVE SOME REASONABLY ACCURATE RECORD OF DISTANCE IN DIRECT AIR LINE FROM THE STATIONS CONCERNED.

IN NEXT ISSUE WE WILL PUBLISH A SPECIALLY PREPARED AND COPYRIGHTED MAP OF NEW ZEALAND GIVING PROGRESSIVE FIFTY-MILE CIRCLES FROM EACH STATION. FROM THIS IT WILL BE POSSIBLE FOR LISTENERS TO COMPUTE WITH A REASONABLE DEGREE OF ACCURACY THEIR DISTANCE FROM ANY STATION.

THIS WILL BE AN INTERESTING STANDBY FOR REFERENCE PURPOSES.

MAKE SURE OF YOUR COPY BY ORDERING NOW. SEND 7/6 FOR THE YEAR'S SUBSCRIPTION TO BOX 1032, WELLINGTON. THIS SPECIAL OFFER CLOSSES AUGUST 13, AFTER WHICH ANNUAL SUBSCRIPTION IS 10/- PER ANNUM.

KEEN APPRECIATION

Mr. P. P. Tahiti, a member of the teaching staff of the Maori College at Otaki, is evidently not only a wireless enthusiast, but a thoughtful and appreciative critic. In a letter to Mr. Temple White, Mr. Tahiti writes:—"Many thanks for the organ recital, which we enjoyed immensely. The choir was much appreciated, and our friends, whom we had invited specially to hear you, enjoyed the treat. It was funny to see the family applauding to your playing, although you could not hear us. We all felt like calling out, 'How do!' to you. The programme after the service was quite good. Especially did we enjoy Allan Wilkie's lecture on Shakespeare. It was, indeed, an education to hear such a man of culture and diction. His voice came through as clear as a bell, and we heard every word. His lecture certainly made us keen to come down to see his final performance. By the way, the family has deputised me to thank you for playing Lemare's 'Andantino,' which caused quite a stir in our little community."

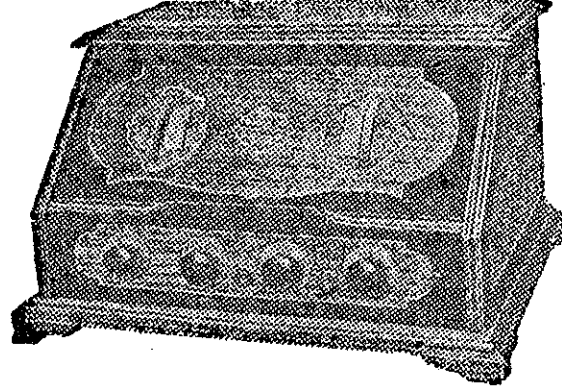
A well-known Wellington citizen reports receipt of a letter from a relative now living at Waimatenui, a settlement some 200 miles north of Auckland. The writer said that he and his family were delighted by the reception which they had of the opening programme of 2YA. The speeches delivered on that memorable occasion, he added, came through as though the speakers were in the room, every word distinct, while the music was delightful. He has a four-valve set, but the reception was so loud that it came through perfectly on three valves. "It was splendid," he concluded, "the best we have yet heard from any station."

EXIT BRIGHT EMITTERS

The Melbourne "Argus" says:—"An interesting reflection of the completeness with which dull emitter valves (including 201A type) have replaced bright filament valves for all purposes of wireless reception is to be found in sales by many of the wireless traders in the city, in which bright emitter valves are being sold for as little as about 1s. Many bright emitter valves which two or three years ago were used exclusively for wireless reception are now being disposed of at prices not much more than one-tenth of those at which they were formerly sold. In fact, at the recent Melbourne wireless exhibition large numbers of bright emitter valves for which there is now no market were distributed free. The remarkable improvements made in dull emitter valves which have enabled them so rapidly to displace bright emitter valves has been one of the most striking features of wireless development in recent years. Apart altogether from the greater economy of the modern dull emitter valve, it has been so improved by internal construction that it is now far more efficient than its bright emitter predecessor. This means that signal amplification valve in a receiver has been greatly increased. In other words, fewer valves are needed now to produce a given volume, and this makes for economy in capital and maintenance costs in the receiver."

The Soviet authorities have carried out their principles in radio administration. It has been officially decided that musicians, authors and artists will receive no additional compensation for broadcasting, nor royalties for the performance of their works. It is argued that if a microphone is placed on the stage, the musician makes no extra effort; and, instead of expecting compensation, the composer should be grateful for the advertising given his works.

The RADIOLA 20



New Principles Employed

In Radiola 20 are incorporated not just one feature above the ordinary in Radio, but many. It challenges comparison in performance with sets at twice the price. New discoveries in circuit design and acoustics are embodied in Radiola 20 which are absolutely exclusive.

ONE-DIAL TUNING.

For average home reception, Radiola 20 has ONE DIAL tuning. For far-off stations there are two minor controls for fine tuning.

MARVEL OF MUSICAL REPRODUCTION.

Radiola 20 is famous for its ability to reproduce musical notes with undistorted volume. Specially treated audio frequency Transformers, exclusive with RCA, make possible the highest known degree of tone fidelity.

RANGE.

By means of a special exclusive circuit, RADIOLA 20 five-valve set does the work of seven tubes.

We do not invite comparison with other 5 or 6-valve sets—the inevitable victory for the Radiola 20 has become monotonous. We, however, do challenge comparison with any 7-valve set on the market.

HEAR THE RADIOLA.

MAIN LOCAL AGENTS.

Farmers' Trading Co., Auckland; Turner's Music Stores, Willis Street, Wellington; Frank Petersen, Masterton (Wairarapa Agency); Derby and Coy., New Plymouth; Bennett, Ltd., Wanganui (Distributor); Lyons, Ford and Kellar, Hawera; Gibbs' Radio Service, Christchurch; Turnbull and Jones, Dunedin; McLauchlan Bros., Waimate; R. A. Rodgers, Timaru; Bennett, Ltd., Christchurch (Distributor); Harlow and Coy., Grey-mouth; Colin Ross, Hokitika.

Amalgamated Wireless (A'sia) Ltd

BOX 830.

WELLINGTON.

Amongst the Listeners

This is the Listener's Corner. It is available for reports of receptions from individuals; the correspondence of Leagues of Listeners and reports of their proceedings; constructive criticism or suggestions for the betterment of radio in general and the consistent improvement of the service that broadcasting can render in our community life. We wish this page to be the meeting-place of listeners and officials for the better understanding of points of view and the problems of others. It is a "Service" page, and we invite you to make use of it. Address all communications: Editor, "Radio Record," P.O. Box 1032, Wellington.

THE CANTERBURY LEAGUE

The committee of the Canterbury Listeners' League met on Monday evening, July 25, and discussed several matters of interest to listeners. Correspondence was read from the Broadcasting Company stating that it would be pleased at any time to consider any suggestions from the league regarding relays.

It was decided to approach the Broadcasting Company and put before it a suggestion for concerts from 3YA on Sunday afternoons, as it was pointed out that in the winter time especially Sunday afternoon concerts would be greatly appreciated by the public who are interested in wireless.

The regulations at present governing wireless were discussed, and it was decided to obtain definite information concerning the same before going further into the question, which will come up again at a later date.

The Howler Nuisance.

The league requests all listeners who experience consistent interference, including howling valves, to communicate with the secretary of the league, giving full description, accurate time, whether intermittent or continuous, position, and any other details of the nuisance.

The league appeals to listeners to supply the above information, so as steps can be taken to see what can be done to improve radio, and deal with the present unsatisfactory state of interference, so prevalent in Christchurch.

2YA is being heard very well in Christchurch on cheap crystal sets—good enough to enjoy every word of the concerts. These sets are quite cheaply constructed ones, in some cases the outlay having been only a few shillings to make up.

As one lady to another: "This so-called artist, except for a booming voice, has had only one term's lesson in her life. And what is her repertoire? A few Scotch songs and old ballads, with an occasional sacred solo. Of course, some like noise and don't like refinement. I am an old artist, not a broadcaster."

WELLINGTON

(Contributed.)

Things have been quiet in Wellington Radio Society's circles since the last general meeting. A self-appointed deputation of two, Messrs. J. H. Owen and R. L. Jones, however, waited upon the Prime Minister, the Hon. J. G. Coates, last week, to voice various criticisms and make suggestions regarding the broadcasting service. These two gentlemen mentioned matters that had already been placed before a meeting of members of Parliament by a delegation sent by the Wellington Society. Messrs. Owen and Jones also went into other questions of a private character in their talk with the Prime Minister, and submitted their own statements, opinions, and suggestions, as apart from those of the society. They made it clear to the Prime Minister that they were speaking only as private individuals, and not as representatives of the society in the latter case. 'Tis well 'twas so.

The Wellington Society had previously indicated that they did not always agree with all the opinions of their officials. At its last meeting the Amateur Radio Society of Wellington, by the adoption of the executive's report, dissociated itself from a rather optimistic statement with regard to the outlook of broadcasting in New Zealand, under existing conditions, made by the honorary secretary, Mr. R. L. Jones, from station IYA, Auckland, a few weeks ago. Mr. Jones himself endorsed the motion that the views expressed in Auckland on the particular subject mentioned were purely his own personal opinion, and not that of the Wellington Society.

PUT A SMILE IN THE VOICE!

C.R.S. writes:—Might I suggest (in no carping spirit, but with a genuine desire to improve matters) that announcers right throughout New Zealand might be encouraged to adopt a little more cheerfulness in the tones in which they announce items? Australia and America are far ahead of us in that respect. New Zealand announcers always sound as if they were dead-bored with their job (as, perhaps, they are!) Mr. Fletcher's description of the Rugby match last Saturday might have been given at his own funeral.

Our Mail Bag

From the huge, even overwhelming, mail that has descended upon us since our birth, it is possible now to select only a few typical passages. A number of letters have been received containing suggestions which require consideration and investigation before reply. Such matters are being gone into, and replies will be sent or published in due course.

"I am quite sure the 'Radio Record' will be appreciated by all listeners-in. The new station exceeds our expectations."—W.K., Milton.

"The 'Radio Record' is just what was required to complete the pleasure of radio in our country homes. We can now look up the programmes and pick out what we require."—G.W.H., Waikou.

"The 2YA station's programme received by my loudspeaker was very distinct, and reception excellent."—S.M., Ruapaka.

"I think the 'Radio Record' fills the bill admirably for the man away back."—J.W.B., Glenzarnock, Colyton.

"Please accept congratulations on first issue—only one thing wrong—to fill in coupon would mean destroying a very interesting picture on the back."—R.P.H., Papatoetoe.

"We here in Rongotea much appreciated the clarity of reception on Saturday last. The speeches were particularly good, both in matter and volume. Turning from 2YA to 2PC (Sydney), the relay of the opening was received with good loudspeaker strength, and very distinct. We also heard the report of the 'flash' relayed from Sydney."—W.S.T., Rongotea.

"2YA comes through here in good volume—fades out somewhat. Piano comes through too loud—drowns the voices of singers at times."—A.H., Moeraki.

"Thank you for the souvenir number, which proves at once both instructive and interesting. Please enter me as a subscriber."—E.C., New Plymouth.

"This paper, I think, will, if it main-

tains its inauguration standard, be very acceptable in every radio home. 2YA fades considerably with us here, which means that with my 6-valve I tie. As 2YK has this little habit, I am beginning to think the topography have to keep my hand 'on the throat' of the intervening land probably has something to do with this, though the Wairarapa-Hawke's Bay satch came through without a variation."—A.J.T.W., Sefton, North Canterbury.

"I consider your new weekly has been badly needed in New Zealand for quite a while. Could you oblige me with two extra copies of your souvenir number?"—D.S.L., Spreydon.

"Splendid reception of opening on our 5-valve."—J.S.M., Otaki.

"Enclosed please find sub. Having a fine paper such as this is, I think, a great step forward."—S.S., Chorlton.

"We think the 'Record' is a good idea. Carry on with the good work, and make the publication interesting. We, and as far as I can gather, most listeners, prefer band and orchestral music. Cornet solos, flute and piccolo, are also welcome, being very audible."—M.S., New Plymouth.

"Reception of 2YA is all that is desired down here, coming through perfectly. Programmes good and much enjoyed. On the opening night I tuned in at 8 o'clock and everything came through perfectly—not a word was missed the whole evening."—R.B., Edendale.

"The 'Record' fills a long-felt want. Situated as I am here, I do not get the daily papers until the following day."—H.L., Reefton.

"The contents of your weekly paper are of interest to any radio enthusiast, while the publication of programmes a week ahead is well worth the small amount involved."—W.W., Masterton.

"It is a splendid idea printing the programmes ahead. There are also some interesting articles included."—L.M.W., Whangarei.

West Coast Reception.

"The 'Radio Record' is a valuable guide to the various programmes, etc. I think it is a much felt want in New Zealand. I expect you will be gathering in all your critics' opinions in regard to the new Wellington station, 2YA. Listening to the opening address, the band item, Mr. Coates's speech, Miss Sawyer's song, and Mr. Nosworthy's speech were all very good. Then fading came in very badly. The set I use is a 5-valve neotrodyne. Last night the church service was very bad, and would not come through clear until 8.15; after that it came through nicely. Christchurch at present is about the best of the four stations, especially the afternoon session."—P. McG., Millerton.

When the Police Became Interested.

As indicating the intense interest in broadcasting, the following letter, from a provincial trader, speaks volumes:—"We managed to be ready for the description of the Trentham races, and placed the loudspeaker just outside the door. During the afternoon it was quite evident that the racing results are of outstanding interest to the general public, for the crowd that gathered spread from our entrance down to the tram tracks. We made the most of our opportunity by distributing literature and sorting out prospects. The police also became interested, but from another aspect. They informed us that we were causing an obstruction to traffic, and threatened proceedings. We accordingly packed as many listeners as possible in the shop, and took care to keep the footpath clear for pedestrians. We anticipate a definite increase of business from the result of the sporting broadcasts."

A Boon to the Backblocks.

J.B.: "I was very glad to hear by radio of the publication of the 'Radio Record.' I live fifty miles from Blenheim, and only get my mails twice a week—often only once, as we have to go eight miles for it, and it is not always convenient. . . . I am very deaf, so deaf that, though I have often been to the House of Representatives, I have never heard a speech delivered, so it was a greater treat to me than to the average man to hear them. The 'unparalleled miracle of wireless,' as the Mayor of Wellington called it, is a very great boon to deaf people like myself, much greater than I can find words to adequately express, and I do feel so very grateful to all concerned—all who have helped to bring it to its present state of perfection."

Times of Items.

Sir—I have seen a copy of the "Radio Record," although at the time of writing my complimentary copy has not reached me, although I have been a licensed listener since the inception of broadcasting. I must congratulate you on your first issue, and consider it just the thing that was wanted. I see you ask for constructive criticism,

and would like to make a suggestion regarding the programmes, that would make them more useful. I suggest the approximate time should be put against each item, as is done in Australia and England. It would then be possible for any listener to construct a programme to suit him from the various stations, say, somewhat on the following lines:—

8 p.m.: Auckland. Orchestral items.
8.5: Christchurch. Soprano singer.
8.10: Wellington. Recitation.
8.15: Dunedin. Band selection.
8.20: Wellington. Humorous item.
8.25: Auckland. Instrumental trio.
8.30: Christchurch. Baritone singer.
And so on throughout the evening. Of course, exact times could not be given, but approximate times would suffice for one to work out a programme at which one could not complain, because one would have arranged it himself. Several listeners to whom I have mentioned this idea think it a good one, and I trust the Broadcasting Company will see its way clear to adopt it.

Wishing your periodical every success.—Yours faithfully,
R. F. HAYCOCK.

A Local Trouble.

Sir—I am one of the hundreds of crystal set users, and live twenty miles north of 3YA station. I think the concerts put out are very good, but with less vocal items and more of the band items, such as are put out from 3YA on Monday, they would be better. But it is not to criticise the concerts that I write this letter. There is a goodly number of crystal users in Rangiora, and we all pay our 30s. per year to hear concerts. Our grievance is that we can't hear them! Our town boasts three amateur broadcasting stations—3AI, 3AJ, and 3AU. These, or, at least, one of them, are on the air nearly every evening, and interfere very seriously with reception. The effect in, say, a vocal item can be produced thus: Sing lustily, and at the same time clap your hand over your mouth, on and off. You just try it, and you will wonder I have not written this letter before. At other times they converse per microphones with the human voice. This also produces a hideous effect. Now, Sir, these radio nuisances are doing a thing which I consider serious. A good instance of the ridiculousness of it is this: The Government charge motorists £2 2s. 6d. per year for license. This goes for use on roads, etc. Now, they might let people put fences across the roads and block them up. We pay our 30s., and we cannot get the goods. The morse from the aforesaid stations spoils programmes more than fading, poor transmission, static, and howling valves all put together. I hope something will be done to ensure our receiving what we pay for.—I am, etc.,
ROBERT G. LOGAN.

Plenty of Hints Needed.

"This paper is what has been wanted for some time past especially to country listeners, and I sincerely hope it gets a wide circulation as it deserves, and as time goes on that it becomes more and more desired and interesting. Space given to hints on installing, tuning, and care of receiving sets should not be spared, as there is yet a lot that amateurs want to know."—H.C.L., The Portage.

What About Howlers?

Sir—It may interest you to know that the test of 2YA in broadcasting the Ranfurly Shield match at Masterton was all received by me clearly. There was some annoyance from "howlers" until IYA opened, and occasional fading was overcome by advancing the volume control. Congratulations to the announcer, who gave a splendid running account. Are any active steps being taken to deal with "howlers"? I am told it is possible to receive a license for practically any type of circuit, and that a "super-het" is licensed to be used with an indoor aerial only, and then connected to an outdoor one, with disastrous results to neighbouring licensees. Some information with regard to "howlers" would be of great interest to listeners in general, as they are a frightful pest, and much more annoying than static.—I am, etc.,
NEUTRODYN.

Congratulations!

Congratulations, 3YA, for your excellent programme broadcast on Saturday, July 23. Every item was excellent, and anybody who could find fault with same does not deserve to own a radio set. The month-organ solos and Hawaiian music, also the dance music, was the best I have yet heard over the radio.—I am, etc.,
GIVE US MORE OF THIS MUSIC.
Hunterville.

ACT NOW!

Send 7/6

for first year's subscription to "THE RADIO RECORD"—the progressive, national Radio Weekly—full programmes for week ahead.

THIS OFFER CLOSSES AUGUST 13.

The "Radio Record" will be issued weekly at the low annual subscription rate, postage free, of 10/- (12/6 if booked).

SPECIAL OFFER OF 7/6 RATE.

As a special introductory offer, however, to induce the largest possible number of subscriptions in the shortest period of time, a concessionary rate of 7/6 per annum for immediate acceptance is submitted.

The "Radio Record,"

P.O. Box, 1032,

Wellington.

Please enter me as a subscriber to the "Radio Record" (published weekly) under your special introductory offer of 7/6, post free, for twelve months from August 1, 1927. I enclose postal notes accordingly.

Name.....

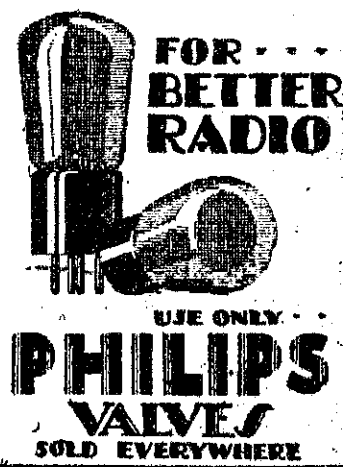
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A GIANT VOICE

A WONDERFUL NEW HORN

Motorists along an open road near Pittsburgh, Pa., U.S.A., recently were amazed by the thunderous music of a brass band playing a march, although an empty hillside lay between them and the nearest building, three-quarters of a mile away. Despite the absence of any visible source of music, they subsequently heard, sweeping forth with full volume and clarity, the swelling chords of the pipe organ, the crashing crescendos of a great male chorus, piping piccolos, booming bass drums, and velvety-voiced violas.

The occasion was a public demonstration, attended by newspaper men, music critics, and electrical engineers, of the latest form of loud-speaking device for which a patent has just been granted to Clinton R. Hanna and Dr. Joseph Slepian, the inventors, both members of the Westinghouse Electric Company's research staff.

New Acoustic Device.

This development, which establishes another milestone in the progress of acoustic science, is built fundamentally around a type of reproducing and radiating device called the exponential horn.

The underlying principle of the new process is proper coupling between the diaphragm and the surrounding atmosphere, which is the essential feature of improved mechanical phonographs and horn-type reproducers. The new arrangement has gone a step further than any preceding development, in making possible the reproduction, at full volume, of the deep bass of the organ and drum. The auditors at this particular demonstration were highly impressed with the merit of the exponential horn, and of the reproducing element used in conjunction with it. The reproducing element is of radically new type, especially adapted for this horn.

Full Volume of All Pitches.

It was explained by the inventors that although it is relatively easy to perfect a reproducer capable of covering the full range of pitches at small intensities, it is, however, a much more difficult problem to provide load capacity adequate for the assurance of full volume at all pitches. And it is significant that the lower pitches, which constitute the backbone of many musical compositions, are the most difficult to reproduce at great intensities.

One of the records used to test the loud-speaker was the "Lost Chord," as sung in the Sesqui-centennial Auditorium by 2500 voices, comprising the associated glee clubs of America. The bass of this gigantic chorus stood out with impressive intensity. Nor were shades of pitch or nuance of voice absent in the chords that swept across hill and dale adjacent to the pole. The fact that the low-frequency notes were not obtained at the sacrifice of the high-frequency notes was obvious in the closing strains of the "Lost Chord." The embellishments which this chorus arrangement gives to the first tenors were heard with utmost clarity riding serenely on substantial undercurrents of first and second bass and second tenor. The ensemble of pipe organ and voices in the Oakley Portugal arrangement of "Adeste Fideles," by the same chorus, was another number that adequately tested the reproducing capacity of the new loud-speaker.

A conversation addressed to the auditors was clearly understood, even at the great distance intervening, this being a most difficult test surmounted by the device.

Great Sound Effect.

The device produces the sound effect of a horn fourteen feet long, but actually is only forty-eight inches in each direction. Its name, the exponential horn, is based on the mathematical formulae used in calculating its peculiar internal curves. It is due to this that sound of all pitches, low as well as high, receive accurate rendition and correct volume.

Although the apparatus used in this demonstration radiates from ten to twenty times more volume than the ordinary loudspeaker, there is no distortion in the reproduced sound; this feature being one of outstanding importance to acoustic engineers. It is curious to note that despite the tremendous volume of sound, which can be sent rolling among the hills a mile away, the amount of electrical energy represented by all this sound is only about 24 watts, or less than that of a flashlight lamp.

The apparatus was not especially designed for lightness, yet there is no part of it which cannot be carried by hand, with the exception of the great wooden horn, and even that can be replaced by a lighter one at some sacrifice of volume in the lower pitches.

It was explained by the inventors that it is relatively easy to perfect a reproducer capable of covering the full range of pitches at small intensities. However, far more difficult is the problem of providing load capacity adequate for the assurance of full volume at all pitches. Namby-pamby bass, the sort often reproduced, that conveys the sound of a feverish moan, was conspicuous by its absence at the demonstration.

For Public Entertainment.

The adaptability of a loudspeaker of this type to various community enterprises of music or entertainment may readily be understood. As applied to a concert in a public park, where band concerts and other municipal programmes are staged, the horn would eliminate any necessity for crowding, or feverish jockeying for parking places near the stand. Judged by the demonstration recently, the concert auditor, should he decide to park nearly a mile away, would enjoy the concert as well as those near the stand. Other major applications of the device will be in large auditoriums and in connection with talking movies.

CLEANING UP THE STATES

TOO MANY STATIONS

BROADCAST CHANGES IN AMERICA

SOME SWEEPING CHANGES.

The newly-appointed body to control radio in the United States has already got to work. The Federal Radio Commission, which will be in supreme charge for twelve months—after that it will continue as an Appeal Court, leaving the administration and control work to the Department of Commerce—consists of five members. Their first move was to hold public hearings of suggestions, offered by various bodies and persons, as to the best method of unravelling the tangle of too many stations.

Too Many Stations.

During last year the number of broadcasting stations throughout the States increased alarmingly, and owing to an ascertained defect in the existing Federal radio laws, the authorities were unable to prevent a station operating or even taking a wave-length already assigned to another station. Hence the confusion in the air became a veritable bedlam. In New York and Chicago, as many as thirty stations were operating at the same time in each city. In an area of 100 miles from the centre of New York City, there were no fewer than 80 stations, in a similar area around Chicago, 68 stations played havoc with the listeners' sets.

Some Must Close Down.

Now the commission has decided that a great many of the 700 odd stations in the States must either close down, or divide time between themselves. In New York City and suburbs only 20 stations will be permitted to operate. It has been decided, and a very definite announcement has been made, that stations will be licensed and authorised to operate on a basis of usefulness. Public service or public convenience will be the determining factor in licensing a station and allotting a wave-length. As there are only 89 channels or suitable bands of frequencies available for the whole of the United States—after

setting aside six for Canada, it follows that many stations will use the same wave-length. This can be arranged for according to the distance between the cities in which the stations are located, and the power to be used. Thus interference will be eliminated as stations of comparatively low power, separated by, say, 100 miles, may use the same wave-length simultaneously.

Exclusive Wave-lengths.

That method, of course, will not provide for hundreds of stations as some national or important high-power stations must be allotted an exclusive wave-length. The second method of allowing for four or five hundred stations is to require these to split up the operating time between them.

No Wide Frequency Separation.

A very important matter, of course, is the frequency separation decided upon between the stations. In New York all stations in that area will have a separation of 50 kilocycles, and the other stations outside the 100 miles from New York will be fitted in between the 50 K.C. separations. Very stringent regulations have been made regarding the observance of its allotted frequency by a station. The deviation above or below the allotted frequency (presumably when not modulating) must not exceed half a kilocycle.

B.C.L.'S PARADISE

RADIO IN ENGLAND.

The radio market in England is in a healthy condition and promises a marked growth, according to W. A. Bartlett, managing director of Brandes, Ltd., London.

"The average American's conception of England being a land of crystal receivers and earphones is out of date," said Mr. Bartlett. "Approximately 90 per cent. of the receivers now use from one to six valves. The market for valve sets is expected to grow rapidly during the next few years for two reasons. The industrial situation, which has been serious, is improving, and the recent reallocation of wave-lengths made at the Geneva Conference has prevented chaos. A two-valve set will tune in 20 stations very nicely in most instances, and a six-tube set can get 280 stations. The desire for reception of distant stations a six-tube set can get 230 stations. The broadcast wave-band is the same as in America with the exception of Davenport, which is using the 1600 metre channel."

LEARN ESPERANTO

In accordance with the announcement made in last week's issue of our journal, we now present the second lesson of the Esperanto course to readers. In view of the oral instruction given by an experienced Esperantist from 2YA, readers are afforded a splendid opportunity to acquire a knowledge of the international language, lessons and items of which up to March last, have been and are being broadcast from 112 stations in 23 different countries.

During the instructional transmission from 2YA, students should have a copy of the printed lesson at hand. This will enable them to follow the broadcast lesson more readily.

Inquiries relative to Esperanto may be made to "The Esperanto Instructor," N.Z. Broadcasting Co. Ltd., Wellington, or care of "Radio Record." A stamped addressed envelope must accompany each inquiry, otherwise a reply cannot be guaranteed.

LESSON II.

(To be broadcast from 2YA on August 11 from 7.39 to 7.54 p.m.)

The Article.

The INDEFINITE article, a, an, is not expressed in Esperanto, being contained in the noun, as in Latin. AN-TENO, an aerial.

The DEFINITE article, the, is translated by la, which never changes. La krado, the grid.

The Noun.

ALL NOUNS (names of things, places or person) end in O. Borno, a terminal; stacio (pronounced stah-seo), a station; Londono, London; Johano, John.

To form the PLURAL of nouns, add J (pronounced Y). Fadenoj kaj telefonoj, wires and telephones.

There are only two cases: NOMINATIVE and ACCUSATIVE (objective)—the latter is formed from the nominative by adding N. Johano konstruas aparaton, John is building a set. La patro sendas mesag'ojn. The father sends messages.

The question may be asked: Why the accusative ending, in Esperanto? It is international, and occurs even in English, although irregularly, e.g. him, them, whom. The accusative removes ambiguity, and makes the language flexible. Its abolition would introduce difficulties, especially to those whose nations in whose languages the order of words is different to that of English. In Esperanto, a DIRECT OBJECT of all transitive verbs is indicated by means of the accusative termination, N, which is added to the

nominative case in both singular and plural.

Thomas trapas RobertoN. Thomas hit Robert. RobertoN trapas Tomaso. Robert hit Thomas. (Note that the N distinguishes the object of the sentence, irrespective of its position); Roberto trapas TomasoN, Robert hit Thomas; TomasoN trapas Roberto.

The days of the week are: Sunday, diman'co; Monday, lundo; Tuesday, mardo; Wednesday, merkredo; Thursday, ĵaŭdo; Friday, vendredo; Saturday, sabato.

The months of the year are: January, januaro; February, februaro; March, marto; April, aprilo; May, mayo; June, junio; July, julio; August, aŭgusto; September, septembro; October, oktobro; November, novembro; December, decembro.

N.B.—The use of capital letters is optional.

Christmas, Kristnaska Tago; Easter, Pasko; Whitsun, Pentekosto.

Vocabulary.

Patro, father; kaj, and; frato, brother; leono, lion; esti (verb) to be; besto, animal; rozo, rose; floro, flower; kolombo, pigeon; birdo, bird; aparteni, to belong; al, to; suno, sun; brili, to shine; tajloro, tailor.

patro kaj frato. Leono estas besto. Rozo estas floro kaj kolombo estas birdo. La rozo apartenas al Johano. La suno brilas. La patro estas tajloro.

[The third lesson will be published next issue.]

CARILLON COMING

Listeners who have read of the charms of carillons of the lowlands will be pleased to hear that in the distant future they will have the pleasure of hearing one of the largest first-class sets in the world from 2YA. The committee in charge of the Wellington War Memorial has let a contract to an important English firm for the supply and erection of a carillon, to consist of 49 bells. This will be installed in the campanile to be erected as soon as possible, and when completed will provide an appreciated item for broadcasting. So popular are the carillons of Belgium, and so famous do the performers become, that on the occasion of their ringing, crowds gather in the streets and stand in silence throughout the hour or more that is occupied in a full-dress performance.

According to a tally published last year there were 184 carillons in the world. Of these 63 were in Holland, which for the past four centuries has been the home of carillon music. Belgium next door had 44, France 25, Germany 10, England 7, the United States 15, Canada 4, and South Africa and Australia one each. Although 31 carillons were destroyed in the Great War, only two—those of the Cloth Hall at Ypres and of Louvain—were of the first order.

Carillons of the first order, such as Wellington is to possess, are much fewer in number than the figures given above. Those in Canada, Australia, and South Africa all come under this heading, according to Mr. W. G. Rice's "Carillon Music and Singing Towers of the Old World and the New." Only 12 in Holland are of the front rank, 11 in Belgium, 5 in France, 4 in England, 2 in Ireland, and 10 in the United States. People who wish to hear carillon music at its highest, according to Mr. Rice, should hear the carillon at Mechlin, in Belgium, when an evening recital is being given by that most famous of all carilloneurs, M. Josef Denyn. Every Monday evening, from 9 to 10 o'clock, M. Denyn gives Mechlin a concert during the months of June, August, and September. Mechlin's carillon, by the way, was made in 1674, and contains 45 bells.

They seem to have developed a very fine ear for bells in Holland, and in the old days, at any rate, the bell-founders had a big job in getting their bells past the critical ears of the experts. Some of the old criticisms of the seventeenth century are said to exhaust the vocabulary of deficiency. In one case, at The Hague, in 1686, the bells of the first octave were denounced as disagreeable in sound and in discord with each other; the next few bells were wrong, but would do; the C next above was false and dull; the C sharp was shrill and dead; the D and D sharp were dull; the E was sharp; and beyond this came a bell "no more musical than a druggist's mortar," and so on. The contract had been to provide The Hague with a carillon equal to Amsterdam's best. In spite of all the critic's vitriol, the bell-founder's work was accepted, and the bells are heard to-day at The Hague. The erection of carillons in Britain and America has been a very recent development. Britain has been famous for centuries for its church bells and chimes, but—until recently the carillon was neglected. The first seems to have been one of 35 bells at Cattistock, in Devon, made by a Dutch firm in 1862, then the same maker made one of 28 bells for Eaton Hall, the Duke of Westminster's mansion. Aberdeen, in 1890, had a carillon of 36 bells. Toronto got the first carillon on the American continent in 1922, and three months later the United States had the second.

ACKNOWLEDGMENT

For the photographs of the Hon. W. Nosworthy and Mr. Cullford Bell, in our first issue, we are indebted to Mr. P. H. Jauncey, 50 Willis Street, Wellington.

Printed and published for the New Zealand Radio Publishing Company, at their registered office, Dominion Avenue, Wellington, of the Wellington Publishing Company, by Archibald Sando, of 47 Freyberg Street, Lyall Bay, FRIDAY, AUGUST 5, 1927.

Ask Me Another The Newest Craze.

£10 in PRIZES.

ALL ABOUT IT

£10 in Cash Prizes.

1st £5

2nd £3

4 prizes each 10/-

The "Ask Me Another"

fad is the craze of the hour in England and America, surpassing the Crossword Puzzle in popular favour. Interesting and highly educational, the questions given here have been made intentionally difficult, and will provide a good test for your general knowledge. They are designed solely from an educational viewpoint, and in no instance may they be regarded as anything in the nature of conundrums.

Even if you cannot answer all the questions do not withhold sending in your answers. Perhaps the winner will not be able to answer them all.

What You Have To Do.

1. Prove your skill and knowledge by answering these questions fully and exactly.
2. Send POSTAL NOTE for 1/- with each entry. THREE entries may be sent for 2/6 and add added for each subsequent entry.
3. The first prize of £5 will be paid to the competitor whose answers are nearest to those held in a sealed envelope by the Editor of the "Radio Record." The correct answers and the names of the prizewinners will be published in the "Radio Record" of August 19.
4. Write answers in numerical order on one side of the paper only.
5. The decision of the adjudicators must be taken as final. In the event of a tie or ties, prizes will be divided, but no competitor can win more than one prize or share in this competition. If more than FIVE competitors tie for the First Prize, the whole of the Prize Money, £20, will be divided among them, and no Second Prize will be awarded.
6. The closing date of the "Newest" Competition is August 13, and all answers must be in before that date.

PUZZLE No. 1.

1. What is the National emblem of Wales?

2. What bird lays its eggs in the nests of other birds?

3. What is the difference between a camel and a dromedary?

4. What is meant by "nulli in secunda," "ex officio," "locum tenens"?

5. What is the "Plimsol Mark" on the side of a ship?

6. Who are the authors of "The Brook," "Pilgrims Progress," "The Cloister on the Hearth"?

7. What characters in English literature "asked for more," said she wasn't born but "grow'd"?

8. When does Boxing Day fall?

9. What are the five races of the world?

10. What is meant by the "three mile limit"?

The Newest Competition,

P.O. Box 1315, Wellington.

Dear Sirs,—Herewith my entry for your "Ask Me Another" Competition, together with 1s. P.N. entry fee. I agree to abide by your rules of entry.

Name

Address

Mainly about Construction

BY "MEGOHM"

A 112-VOLT B ACCUMULATOR

SIMPLE AND EASY TO CONSTRUCT

(CONCLUDED FROM LAST WEEK.)

The acid used should be pure sulphuric acid, as the small extra cost is worth while and ensures long life for the battery. Five of acid to twenty-one parts of distilled water is the correct proportion to use. Place the distilled water in a basin and pour the acid in gradually, stirring constantly with a glass rod. Fill the tubes by means of a hydrometer or a jug and small glass funnel, being careful not to spill. The acid should come about $\frac{1}{4}$ in. above the wide part of plates. Each tube requires about ten drams of solution, and when the plates are not in this reaches a depth of about $\frac{3}{4}$ inches. Mix 63 fluid ounces of distilled water and 15 fluid ounces of acid, which may fill the tubes unless their diameter is above the usual average.

The panel of $\frac{1}{4}$ in. ebonite measures 6 $\frac{1}{2}$ by 8 $\frac{1}{2}$ inches, and on it are placed the sockets for tapping off voltages from each row of cells. If the constructor desires other voltages in addition to those given, he can add the necessary sockets and tap the cells when required, but a strip of lead should always be soldered to the plate connector to stand upright, and the tap soldered to the top in the same way as done on the end plates. The sockets used will depend upon the pattern that can be purchased, but the style that sink flush with the panel makes the neatest job. Seven holes are drilled $\frac{1}{4}$ in. apart for the top row of sockets, and $\frac{1}{4}$ in. from the top edge are spaced out the holes for 0 and 112 socket, and the flex leads and fuse connections. Three-eighths of an inch above the bottom edge are the centres of the terminals carrying the three voltages, and the negative and charging connections, and $\frac{1}{4}$ in. from the bottom of panel three holes are drilled to take $\frac{1}{4}$ in. brass bolts, heads inside the panel, and a washer and nut outside for the ends of the fuses. Under these bolts and the terminals is a small plate of thin brass as a connector, and under the top end of which the fuse is clipped. Allow room at the sides for the thickness of the wood supports and screw-holes to fix panel. Each piece of flex is about six inches long, one end being connected to a pin to fit the sockets. The other end of the three voltage flexes goes behind the panel to the fuse bolt on its right. The negative flex connects behind the panel to the negative terminal below it. The charging terminal at the right is merely connected to the 112 socket as a convenience in connecting up the charger. When charging up, all pins but the negative are plugged into the wood strip below the panel, and the charger is connected to the negative terminal, and the positive charging terminal at the other end of panel.

The fuses are made by pasting a piece of thin tinfoil upon a piece of writing paper, and then cutting this into fine shreds with sharp scissors. The best cuttings just over an inch long can be stuck with secotone to a strip of strong paper, trimmed to size and the ends slipped under the washers and brass plate provided. These fuses may be considered a difficult thing to construct, but so long as there is a thin place in the length they will answer well, though very unevenly cut, and will absolutely protect any valve from damage by I.T. being "shorted" over the filament.

The acid should on no account be put into the tubes until the whole battery is completed and ready for the plate-forming. When all is ready, connect

up the charger, only the negative flex being plugged into the panel. Turn on the current from the 230-volt mains with a good resistance, one lamp at least, in series with the rectifier. Forming currents should be gentle, and nothing will be gained in any way by forcing the pace. In a few minutes the positive plates will begin to show a brown colour if all is going well and the charging may proceed for an hour or so under supervision at frequent intervals. Then reverse the connections of the charger and leave for an equal time, so that the plates are reversed, those that should be negative now being brown. Then reverse again for double the time—now the positive plates will gain their proper colour, and in two hours reverse again, after which the charger may be connected the proper way and left for a few hours. The battery will not hold much current at first, but with continued charging each day, and not being allowed to stand very long, capacity will soon come, and will increase rapidly with alternate charging and use. The rule that applies to other accumulators applies to this also—never let it stand very long in a discharged state. Before commencing to form the plates if a chemical rectifier is to be used, make sure that the aluminium in it is pure, a thin strip of good metal will be far more efficient than a thick rod of doubtful quality. There should only be a gentle glow round the aluminium, and if there is liberal sparking from it, rectification is not taking place, as thoroughly as should be desired. If there is any tendency for both negative and positive plates to turn whitish and a white deposit to be precipitated to the bottom of the tubes, charging should be stopped immediately and proper rectification obtained. However, if a reliable rectifier is being used, no trouble whatever is likely to be experienced. Use only enamelled wire, 22's or 20's for all wiring, and do not let the tap wires slope so that any moisture on them will run to soldered joints or down to the panel.

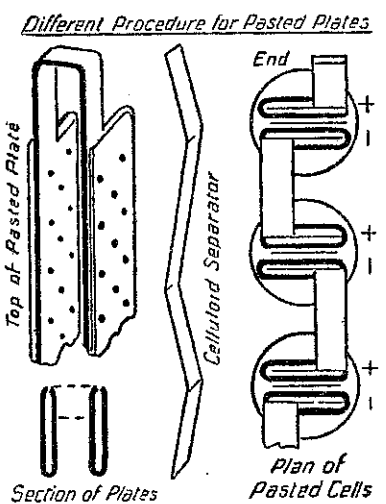
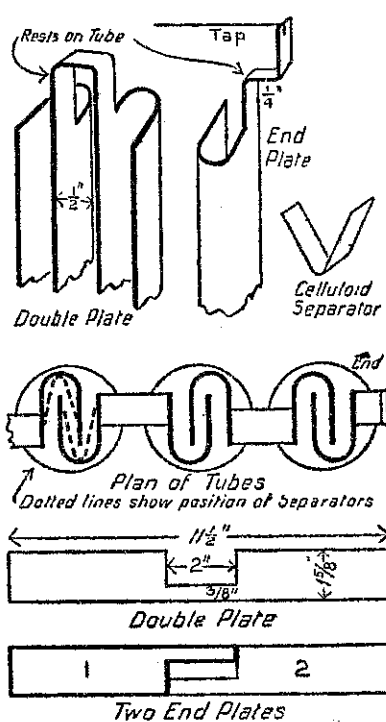
To charge this battery from 105-volt made or procured, mounted on a small ebonite panel and fixed in a convenient position on the outside of the case. The only actual alteration in the battery is to take out the wire connecting 56-volt tap to 58 minus, the latter then being connected to the middle contact of switch. A wire is led from 56 tap (b) to the right-hand arm of switch; the left-hand is connected to 0 socket, and the right-hand contact of switch is connected to 112 socket. The left-hand contact of switch is a blank. When the switch is pushed to the right over the two contacts, the two halves of the battery are placed in parallel for charging at 105-volts or thereabouts. When charging is completed the switch is pushed to the left, and so places the battery in full series for reception. With chemical rectifiers a lamp or suitable resistance must be included in the circuit, whatever the voltage of the mains.

If it is decided to put paste into the plates, holes must be punched through them from what is to be the inside, and any excessive burr can be taken off with a sharp chisel. A two-inch nail will make a suitable punch. Instead of the plates being folded into a U shape, they must be folded over a strip of 1-16th brass $\frac{1}{4}$ wide and, say, 6 in. long. Where the long edges meet they are to be turned towards each other on the edge of the brass by tapping, so that they meet fairly closely with the

brass strip inside. The strip can now be withdrawn at the end, and the two edges of the plate separated far enough to allow of the paste being put in, sufficient for a thickness of about 1-16th of an inch. Now the two parts of the plate are pushed together again and the ends tapped down with a hammer to keep the paste in place, whilst the whole can be tapped down with a piece of wood laid on and struck with the hammer in order to consolidate the paste. There must be no wide gaps at the joins or the paste will gradually find its way out. The constructor would probably get the paste from old accumulator plates as the readiest source of supply, and each pair of plates must have one filled with the positive and one with the negative paste, and eight end plates of each. The celluloid separators, one for each cell, can be strips 6 in. long and $\frac{1}{4}$ or $\frac{1}{8}$ wide, bent by warming, to give the acid free contact with the surface of the plates.

It would always be possible to convert the plain plates into pasted ones even after the battery had been in use for some time.

It is just as well to note that all dimensions given should be taken as



approximate only, and that they may be modified as found necessary. Unless the tubes are very full in size, the plates should be cut $1\frac{1}{2}$ inches in width to give minimum trouble in fitting. The separators can be put into the plain plates before the latter are put into the tubes, each pair down one side of the row to have a separator near the top of each, and those on the other side to have a separator near the bottom of each.

The main point in making the frame is to make all divisions an equal square that will take the largest of the tubes without any jamming or forcing. An easy way to arrange this is to mark on the edge of a piece of paper the width that will take the tubes and the thickness of the laths used. Then take a piece of lath and mark off these dimensions the required number of times, remembering that no lath thickness is required at the ends, as all four sides are put on separately, nailed with thin brads.

The cleaning of the lead is very important, whether pasting or not, and none of the cleaning material should be left on the surface.

If the battery is intended for heavy duty, pasting will be well worth the trouble, as it will give several times the capacity, and almost full capacity will be available at once, which is not the case with the plain plates. To make the paste, old accumulator plates are broken up, negative and positive kept separate; the hardened paste is then ground to a powder and made into a stiff paste by mixing with acid of the same strength as used in the battery. The old plates used must be free from "sulphate," which is a whitish deposit that shows on the surface. For pasted plates more holes may be made in the lead than are shown in the diagram, and so long as the diameter is well under one-eighth inch they might con-

veniently be made with a pair of punching pliers, afterwards hammering flat.

Cut a trial pair of plates and test them for fitting in the tubes before cutting of the whole lot. This may save a deal of extra work at a later stage.

When all the plates and separators are in place ready for the acid, test across each cell with a dry cell and 'phones or galvanometer, which will show if any plates are touching and require separation.

If lead weighing 3 lb. to the square foot can be obtained, it will answer well, and in that case the total weight will be about 24 lb.

THE CRYSTAL

SETTING LONG DISTANCE

With the advent of a powerful broadcast station such as 2YA, good crystal reception will be possible on both sides of Cook Strait, and for a considerable distance inland both north and south. Crystal listeners situated fifty miles or more from Wellington will be able to put in much interesting experiment in the way of increasing the volume of their reception; firstly, by the testing of different combinations of crystal and cat's whisker; and secondly, by the addition of an amplifier as is found necessary.

But the first item in getting distance with the crystal is to provide the very best aerial, for it is necessary to collect as much as possible of the infinitesimal voltage that comes through the ether. Forty feet is not too high, and a hundred feet or more will be a suitable length. Good insulators are essential, and great care must be taken to prevent the smallest leakage at the lead-in. The position chosen should be as far from trees as possible, as trees close to the aerial on the side from which the wireless waves arrive may easily reduce the strength of signals to one-half. However, the screening effect of trees can only be determined by actual trial at the particular spot, and if they are not too numerous, and are situated not less than fifty yards from the aerial, their effect will probably not be at all serious. Whilst permanent detectors are good for short distances, they would, unless particularly sensitive, be superseded by the cat's whisker contact for long distance. The same rules apply to purchasing crystals as to the purchase of components—it pays to pay for a good one. Just recently the writer purchased a couple of permanent detectors to try out. One of them cost 3s. 3d. and the other 1s. 6d.; the former gives just double the volume of the latter. Galena is the crystal most recommended for long distances, and, instead of the usual contact with the end of a fine copper wire, a small pointed portion of graphite from a B grade leadpencil may be bound to the end of the cat's whisker with a fine wire and used to contact the face of the crystal. This combination is very sensitive, and its adjustment very critical, as only a very light contact is necessary. On this account a less sensitive combination may be preferred on account of its greater ease of operation, especially where valve amplification is employed. The efficiency of a whisker depends upon its freedom from any tendency to oxidise. In this respect it is said that there is nothing quite so good as platinum, which will be found to give surprising and consistently good results, says a writer in an English journal. It would only be necessary to bind a short fragment of platinum wire to the end of the cat's whisker in order to experiment. Gold is also said to be a close runner-up to platinum.

Adjustment Essential.

Fine adjustment is an essential factor for long distance, and to obtain this it is recommended that the usual adjustment is provided on the cat's whisker holder for finding a sensitive spot, the whisker itself being a delicate spring of about four effective inches of No. 36 copper wire. The crystal cup is mounted upon a strip of brass at a distance of about one inch from one end. At this extreme end, which is bent downwards to meet the panel, a hole is drilled and the end of the strip bolted to the panel, with the main portion of the strip slightly raised above the panel. At the end farthest from the crystal a hole is drilled and a screw or bolt passed through it and the panel in such a way that turning the screw will raise or lower the end of the brass strip. This provides a very fine rise and fall for the crystal, and after the usual

adjustment has been made with the whisker, pressure can be regulated by turning the screw. Different varieties of crystals vary to an enormous extent as regards the actual pressure of contact which should be made with them by the cat's whisker. For instance, a sensitive crystal of iron pyrites works most efficiently when it is used with a rigid steel contact (such as an ordinary sewing needle), applied with the pressure of its own weight. On the other hand, however, a silicon crystal requires only a very light pressure of a brass wire to produce its maximum volume of reception. With galena crystals, the finer the texture the finer will be the required pressure of the whisker.

A solenoid coil tuned by a variable condenser will give the smoothest control and sharper tuning than is usually obtained from a moveable two-coil arrangement.

Next Week's Features

NEXT WEEK THE CONSTRUCTION OF AN EFFICIENT AND EASILY BUILT CRYSTAL SET WILL BE DESCRIBED. THIS WILL BE FOUND PARTICULARLY USEFUL, AND IS THE RESULT OF SPECIAL EXPERIENCE WITH 2YA.

THE FOLLOWING WEEK THERE WILL BE GIVEN THE DETAILS OF A SMART-LOOKING AND SPECIALLY DESIGNED SET, WHICH WILL BE CALLED

"THE RECORD."

THIS WILL BE THE BASE OF FURTHER ARTICLES.

THESE ARTICLES WILL BE SPECIALLY VALUABLE TO BEGINNERS.

THAT HUMMING SOUND IN CRYSTAL-SET PHONES

HOW IT MAY BE CURED.

Some crystal listeners whose homes are connected to an electric supply may find that there is a slight continual hum in their headphones. This interference is caused by nearness to the electric wiring in the house or by the influence of street mains upon the aerial, which may be running more or less parallel to the street wires. Here is a simple method that may eradicate the trouble. Place a slightly-moistened finger on the earth terminal of the set, and if this cuts out the hum, then a permanent equivalent to the finger can be tried. This consists of a length of a few feet of bare copper wire attached to the earth terminal of the set and allowed to run loose along the floor. It may improve matters to connect the free end to a metal object, perhaps a foot-square sheet of metal placed under the floor covering, but neither this nor the wire is to be directly connected to earth.

WIRE FOR AERIALS.

Which is the best kind of wire for a broadcast receiving aerial? Opinions vary a little on this point. An American authority says: "While the actual size would depend upon the span, No. 14 B & S hard-drawn copper wire will answer for any spans up to 125 ft. Above this, it would be safer to use No. 12 wire. Phosphor bronze wire is used for long spans but the cost is considerably higher. The solid wire, despite theory, will not give an appreciably higher resistance (which is undesirable) than stranded wire. From tests on loop aerials, it has been found that the heavier the wire the better the results obtained. Care should be taken that all the wires should be as well insulated as possible, both from the frame of the loop and other objects."

HOME CONSTRUCTORS

Write for our Illustrated Catalogue of Radio Parts.

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BRAND'S PHONES
IGRANIC COMPONENTS
RADION PANNELLING

INTERNATIONAL RADIO CO., LTD.,
FORD BUILDINGS, WELLINGTON.

RADIO SENSATION!

INCREASED SELECTIVITY
GREATER DISTANCE
MORE VOLUME
BETTER TONAL QUALITY

CARBORUNDUM DETECTORS

AND STABILISING UNITS.

Can be used on any set from crystal hook-up to super outfit. Users of Carborundum detectors in crystal sets have reached out to stations 1,100 miles away, and get perfect reception at 200 miles.

Also stocked: the world-famous
HELSESEN HIGH TENSION
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Full particulars and prices from

JOHN CHAMBERS & SON LTD.

WELLINGTON.

ALSO AT:
Auckland, Christchurch, Dunedin and Invercargill.

The Children's Corner

By "ARIEL"

Dear Children,—Here is a picture for you to paint. The two quaint little things who look so pathetically innocent are Pokkit and Pyk, the Pixie Twins, and the fierce-looking individual is a Pixie Farmer. He appears to be a bit peeved about his old apples, but you can read about them for yourselves in the little rhyme. Now, just see who can make the prettiest picture. Use your own ideas about colours, and to the boy or girl who sends in the best colour scheme I will give a good book prize. This competition will close on August 24, so that those away out in the country can write in in time.

Then I have another competition for you. I want you to write me a letter about "What you like best about broadcasting." Tell me in your own way just how it appeals to you and what fun you get out of it. I see that some of our country schools are going to be equipped with receiving sets and loudspeakers, and it is intended to broadcast lessons from 2YA. This will be very interesting and helpful to those who live away out of ordinary reach, and will enable many to get up-to-date lessons. There are quite a few hundred children in New Zealand who are so isolated that they don't get to ordinary schools—away in lighthouses, islands, and way-back farms, and so on. What a blessing radio will be for them. Send in your letters on this subject by August 24.

Now what do you think of wireless pictures? Photographs are broadcast in Vienna every night as part of the ordinary programme. An Englishman named Thorne Baker, who has been experimenting with picture telegraphy for over twenty years, is the first to be successful in producing wireless pictures. A special machine, of course, has to be used to pick up these pictures. I wonder how long it will be before New Zealand is "picking up" as well as "listening in"!—My love to you, Ariel.

ANSWERS TO LAST WEEK'S RIDDLES

1. Because one good turn deserves another.
2. The baby, of course, because he is a little bigger.
3. Because it wanted Samoa.
4. Because it saw the kitchen sink.
5. Because the table had cedar legs.
6. One I wear, the other I was.
7. Because she spreads her sheets, crosses the line, and goes from pole to pole.
8. One is hollowed out, the other is hollowed in.
9. Because the dragon fly drank the dragon dry.
10. The first is assaulting with intent to kill, and the second is killing with intent to salt.

WHAT AM I?

You'll find me in story but not in tale,
You'll find me in balance but not in scale,
You'll find me in laughter but not in joke,
You'll find me in soften and also in soak,
You'll find me in lobby but not in hall,
You'll find me in lofty and also in tall,
You'll find me in flower but not in bloom,
You'll find me in shovel and also in broom,
You'll find me in fortnight but not in week,
You'll find me in humble and also in meek,
To find out my whole study each line in turn,
I'm a place where reading and writing you'll learn.
Answer next week.

LAST WEEK'S ANSWER.

Ladybird.

GRAMMAR

"Never end a sentence with a proposition," says the Grammar Book."
Father: "George, do you wish to be read to?"
George: "Yes, father."
Father: "What book shall I read to you out of?"
George: "Burton's Anatomy of Melancholy."
Father: "Goodness, gracious, my boy; what did you choose that book to be read to out of from for?"

LIMERICKS

Quoth a crab down at sunburn-on-Sea,
"Social pleasures mean nothing to me,
Folks who ask me are kind,
But I've made up my mind,
That I won't join the Winkles for tea."

On a roof an escaped cockatoo
Asked a cat, "Oh, say, what shall I do?
And the cat he made answer,
'Cheer up if you can, sir,
And ere morning I'll teach you to mew."

When a tiger went hunting one day,
He encountered a kitten at play;
With a mouse that was wee,
In surprise questioned he,
"Do you eat 'em? I throw 'em away!"

That infamous Emperor Nero,
Felt his temperature dropping to zero;
To make it rise higher,
He set Rome on fire,
And struck up "The Conquering Hero."

The Emperor nicknamed Caligula,
In his habits was not too particular;
Having dined with his horse,
On returning, his course
Was a circum-rotating zag-zigular.

"The next person who interrupts,"
said the Magistrate, in a noisy police court,
"will be put outside." "Hurray,"
shouted the prisoner.

STATICS

Smith minor, when asked in a general knowledge paper to account for "the phenomenon known as dew," wrote: "The earth revolves around the sun for 365 days, and it revolves around itself for 12 hours; surely a little moisture is not surprising?"

"Should shingling be made a crime?"
—It certainly is a barber-us custom.

Overheard on a building—"Mind as you come down that there ladder, Bill. I've just took it away."

Everyone provided for—
First Actor: Did you give your open-air show despite the rain?
Second ditto: Yes, the stage was sheltered by trees.
First ditto: What about the audience?
Second ditto: Oh, we lent him a mackintosh.

Bridget (on being presented with a hat by her mistress): Oh, thank ye, m'm, that's just the one my Bill likes me in best.

Old lady (meeting sailor): Do you know my son Jack, in the Navy?
Sailor: Which ship?
Old lady: What, be there two?

"I hear you have lost your dog. Have you put an advertisement in the paper?" "Of course I haven't—the dog can't read!"

4000 LETTERS

"UNCLE JACK'S" MAIL-BAG

WONDERFUL POPULARITY

Is there anyone who receives more letters than a broadcasting "Uncle"? It is hardly likely. Within eleven months Uncle Jack, of 3YA, has received 4000 letters. What a wonderful testimony to the popularity of the oldest radio uncle in New Zealand.

Who is "Uncle Jack," of 3YA? This question has often been asked, so perhaps the following particulars of his life will be of interest to listeners-in. Uncle Jack, who in real life is Mr



—Steffano Webb, photo.

Ernest J. Bell, was born in Richmond, Surrey, in 1885, and when under fourteen years of age he left school and entered the local Public Library as junior assistant, a year later he went to the Hammersmith Library, London, and 3 years later was appointed to the staff of the Fulham Libraries. Hard work and diligent study secured for him the professional examination of the English Library Association, and he was later elected a London representative on the Council of Library Assistants Association, ultimately being

POKKIT AND PYKK.

Pokkit and Pykk were pixie twins,
As like as pins;
Nobody knew the one from t'other;
In all but name,
So just the same
Were Pixie, Pokkit, and Pykk his brother.

"The latch of the orchard gate's undone,"
Said Number One,
"The Pixie Farmer's forgotten to lock it;
Let's get there quick,"
Said Pixie Pykk.
"Quicker than that," said Pixie Pokkit.

When the farmer caught them, "Now," says he,
"It seems to me,
Since stolen apples cannot be hid,
And you look the same,
You shall share the blame;
It seems a shame,
But I'll wallop you both" (and so he did.)

elected an Hon. Fellow in recognition of his work. In 1911 Mr. Bell resigned from his position and emigrated to New Zealand, landing unknown in the City of Auckland. He was successful in obtaining the temporary position to recatalogue the Library of Auckland University College, and while doing that work received the appointment as Chief Librarian to the Canterbury College Public Library, a position which he has now held since 1918. Mr. Bell has contributed many articles to Library and other journals, and last year was elected to the executive of the New Zealand Libraries Association. While in Christchurch, he has reorganised the Library and special attention has been paid to the Children's Library, which is now one of the best in the Dominion. Close upon 2000 boys and girls make constant use of this section of the library.

Many thousands of adults are also familiar with the voice of Mr. Bell, for he has now delivered a regular talk on books from 3YA during the past few months and the large number of messages he has received from all parts show that these talks are of interest to a wide circle of radio listeners-in, who are also keen readers.

A Big Repertoire.

To have received four thousand letters and messages from boys and girls and their parents is the proud record of Uncle Jack, of Christchurch. Since September last year he has entertained the children twice weekly, on Wednesday and Saturday evenings, except for the three weeks when he was away on holiday, and during those three weeks Aunt Edna, also well known to the children, very capably conducted the sessions. Uncle Jack has upwards of 300 stories, has completed several serial stories, and in addition has delighted the boys and girls with many songs and choruses. It is not only over the air that the voice of Uncle Jack is heard, for when he hears that a little boy or girl is ill a surprise visit has taken place and the hearts of the wee folk have been gladdened by the presence for a few minutes of their radio Uncle. A little fellow in Dunedin had difficulty in getting a certain school text book, and of course Uncle Jack had to know about it, but the laddie was soon in possession of the volume.

Words and music of songs form the bulk of requests, too, and in most instances the required information has been sent along.

Lucky Writers.

When the two thousandth name was entered in Uncle Jack's big list, he

promised a present to that child. The lucky boy was Hector Steele, of Rotorua, who duly received his promised packet. Last Saturday, July 30, saw the four thousandth letter registered, and this was Joyce Reynolds, of Beckenham, Christchurch, who will eventually receive a packet from Uncle Jack.

Aunt Edna in real life is Miss Edna Pearce, a young lady who has been on the staff of the Christchurch Library for about 5 years. Aunt Edna is in possession of a pleasing voice and she has delighted many Christchurch audiences by her sweet rendering of well-known songs. Aunt Edna has assisted Uncle Jack upon several occasions and she is now a firm favourite with the listener-in.

Letters From Australia.

Uncle Jack receives letters from all over New Zealand and even from Australia. The most recent one was read at 3YA on July 28. It reads as follows:—

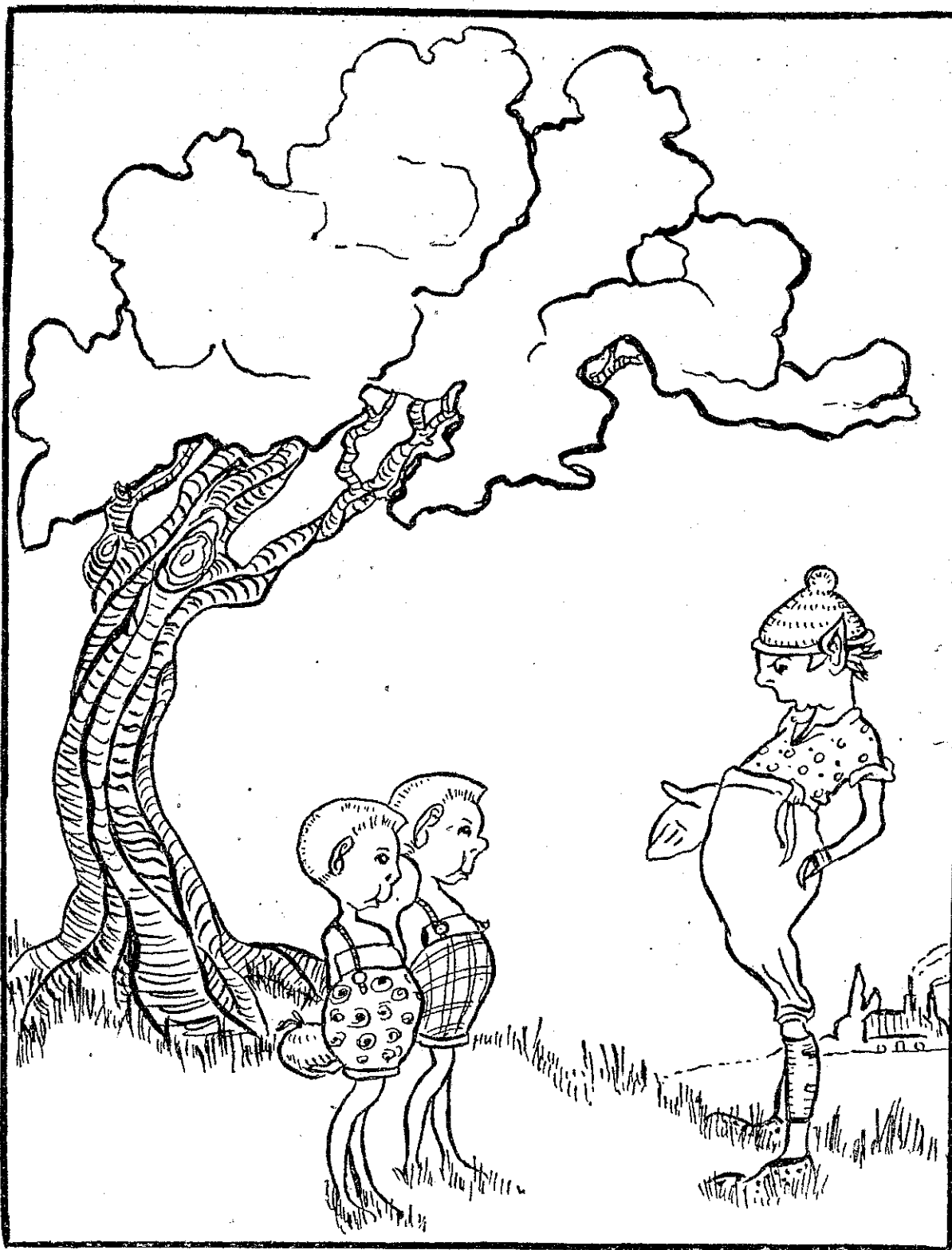
Dear Uncle Jack,
We thought it would please you to know that we heard you quite clearly away here in Australia, on the Murray River. Dad was tuning in at 5.10 p.m., our time, in broad daylight, and heard you telling all the little boys and girls in New Zealand about Robinson Crusoe, and you had a little girl singing with you. You read letters from Rotorua, Wanganui, and, of course, plenty from your city, also some Maori names.

Dad says we must be about 1500 miles away as the tui would fly (if he could), so we are pleased to have heard you and we send best wishes to all Christchurch kiddies. If you would like to try and acknowledge on the air, please try on Wednesday, July 27, at the end of your talk, 7 p.m., and we will be listening

Customer: I want a pair of sporn-rimmed hornicles—I mean sporn-rimmed heastacles—pshaw! I mean heck-rimmed spornacles. Shopwalker: I know what you mean, sir. Mr. Perkins, show this gentleman a pair of rimsporned heastacles.

PAINT THIS PICTURE AND WIN A PRIZE

For the best colouring of this picture, sent in by August 24, I will give a handsome book prize. The children are the Pixie Twins, Pokkit and Pyk, and that is a Pixie Farmer at the back. Now, who can paint them properly?—Ariel.
P.O. Box 1032, Wellington.



SEND
IN
7/6
NOW!

The normal subscription rate of the "Radio Record" is 10/- per annum paid in advance, or 12/6 per annum booked.

As a special introductory offer we give all present listeners the opportunity of securing the first year's issue for a Subscription of 7/6

To permit of country readers at a distance accepting on this basis this offer will remain open to August 13, from which date our normal subscription will be 10/- cash, 12/6 booked.

Link up Now and secure your full programmes a week ahead.

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or

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"Dairy Exporter" Office.

2YA Afternoon Sessions Soon--What Causes Fading?

Lectures on Imperial Affairs--1YA Featured

THE RADIO RECORD

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

Price 3d.

VOL. 1, NO. 3.

WELLINGTON, N.Z., FRIDAY, AUGUST 5, 1927.

Per Annum, Post Free, 10/-; Booked 12/6.

WORLD-WIDE BROADCASTS

EXTRAORDINARY SHORT WAVES

WHAT WILL BE THE OUTCOME?

Many New Zealanders have listened to programmes on ultra-short wavelengths broadcast by PCJJ, Holland and 2XAF, Schenectady, U.S.A., either by rebroadcasts or per medium of their special constructed short-wave receivers. The following article written by Martin P. Rice, manager of the broadcasting activities of the General Electric Company, shows how progress is being made in the linking up of the nations through ultra-short wavelength radio as the various States have been linked by land line chain broadcasting in the United States.

Inter-continental rebroadcasting of radio programmes is possible. Tests conducted by General Electric Company engineers at Schenectady (owners of the short-wave station 2XAF) have demonstrated that by the use of short waves, signals may be flashed across the Atlantic or the Pacific with sufficient volume and quality to permit rebroadcasting by distant receiving stations.

Vagaries of weather may interfere, and transmitting sets near the receiving point may smear the received signal; but under average conditions our engineers can predict results. On several occasions it has been possible to announce in advance a rebroadcast programme and carry through that programme successfully.

Just at present American listeners must be content with programmes originating for the most part in the 700 or more broadcasting stations in the United States, but it is quite reasonable to expect that when engineers in other countries have developed short wave transmitters on a par with the transmitters used at the General Electric developmental station, American stations will be able to pick up and rebroadcast programmes from other continents.

CIRCLING THE GLOBE.

During the past two years Schenectady programmes have been rebroadcast by stations in Johannesburg and Durban, South Africa; Perth, Sydney and Melbourne, Australia; Keston, England; Paris, France; and Timucuc, Cuba. In that period our radio engineers have been making thorough and comprehensive propagation tests, at all periods of the year, in darkness and light, with different power volumes, and on a variety of wavelengths. This work has recently been in charge of M. L. Prescott, and a great mass of data has been accumulated.

SUCCESS IN BRITAIN.

Recently we received a letter from A. G. D. West, assistant chief engineer of the British Broadcasting Company, informing us that signals of 2XAF, our 32.77 metre transmitter, had been rebroadcast by all the stations of the British Broadcasting Company chain in the British Isles seven successive Tuesday evenings. These programmes have been included as a regular feature of the British Broadcasting Company programmes. They have not always been of high quality, but always of interest to the British listener. Reception is sometimes marred by fading, and at other times the chatter of ship transmitters, particularly those of the spark type, has prevented reception.

PARIS RESULTS GOOD.

Of particular interest is Captain West's statement that while the British Broadcasting Company found 2XAF's signals fading somewhat during the transmission on March 8, the Le Petit Parisien station in Paris picked up 2XAF, and these broadcasting signals were clearly received in England.

P. Gendron, engineer in charge of the Le Petit Parisien station, has been co-operating with the engineers of WGY, Schenectady, and he is very anxious to begin broadcasting on short waves, in addition to his present wavelength of 340.9 metres, in the hope that the French signals will be heard and broadcast in the United States.

2XAF AND 2XAD.

Of the various transmitters used on short wavelengths by our engineers, the most reliable thus far have been the 32.77 and 22-metre stations, 2XAF and 2XAD, respectively. The latter station has been found most reliable by the British Broadcasting Company when the transmission from Schenectady has been during daylight. Our engineers are very proud of the reported results of their transmission.

The Washington birthday address by President Coolidge was sent out on both 32.77 and 22 metres, and the British Broadcasting Company successfully broadcast 20 minutes of the speech. A change of time, of which the English engineers were not informed, prevented broadcasting of the earlier parts of the address.

RELAYED AT DURBAN.

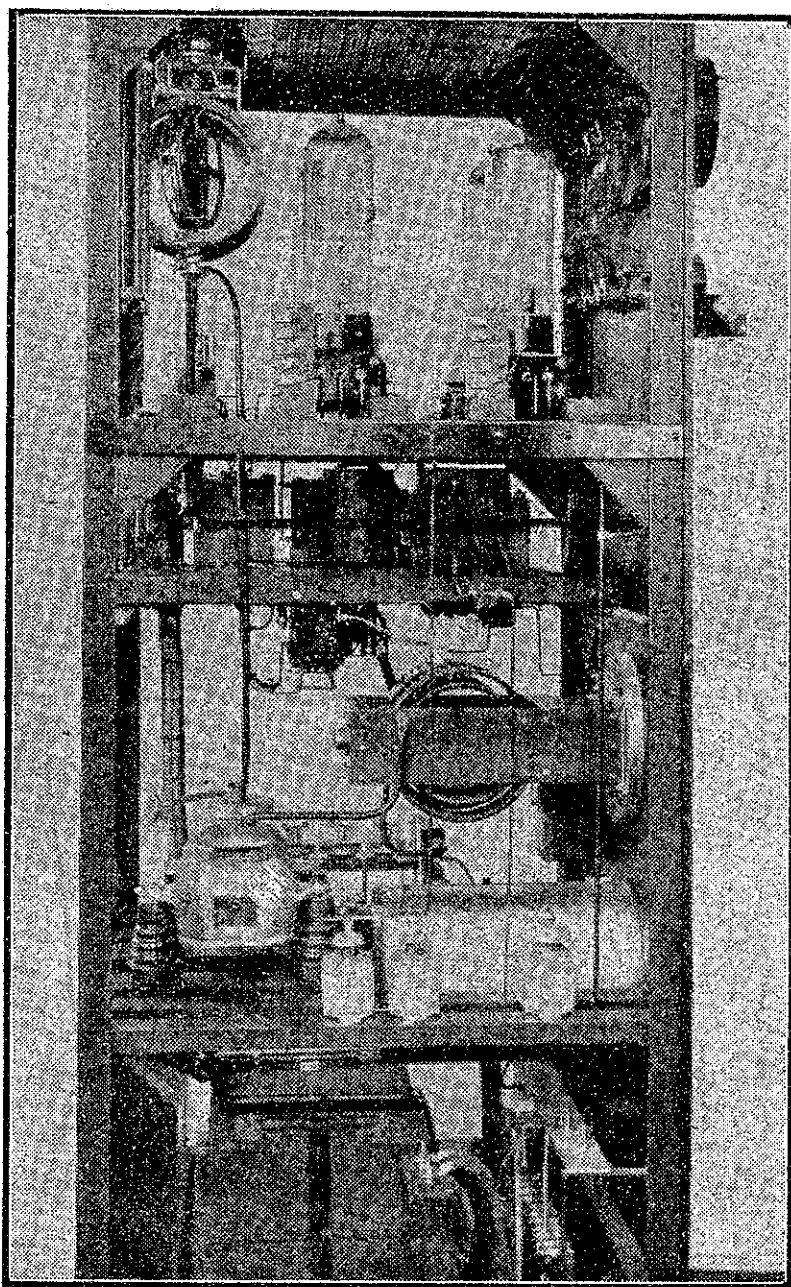
A few weeks ago a station at Durban, South Africa, broadcast 2XAF signals, and Americans on a world cruise heard greetings from home as they sat in the ship's lounge, in the harbour of Durban. On November 27, an address by Hiram Percy Maxim, of the Amateur Radio Relay League, delivered to the league members in South Africa, was relayed by Station JB.

Beginning September 13, station GWT, Perth, Australia, 11,300 miles from Schenectady, rebroadcast the first of six programmes from 2XAF. So successful was this station in getting the 32.77 metre signals that advance announcement of rebroadcasting was published.

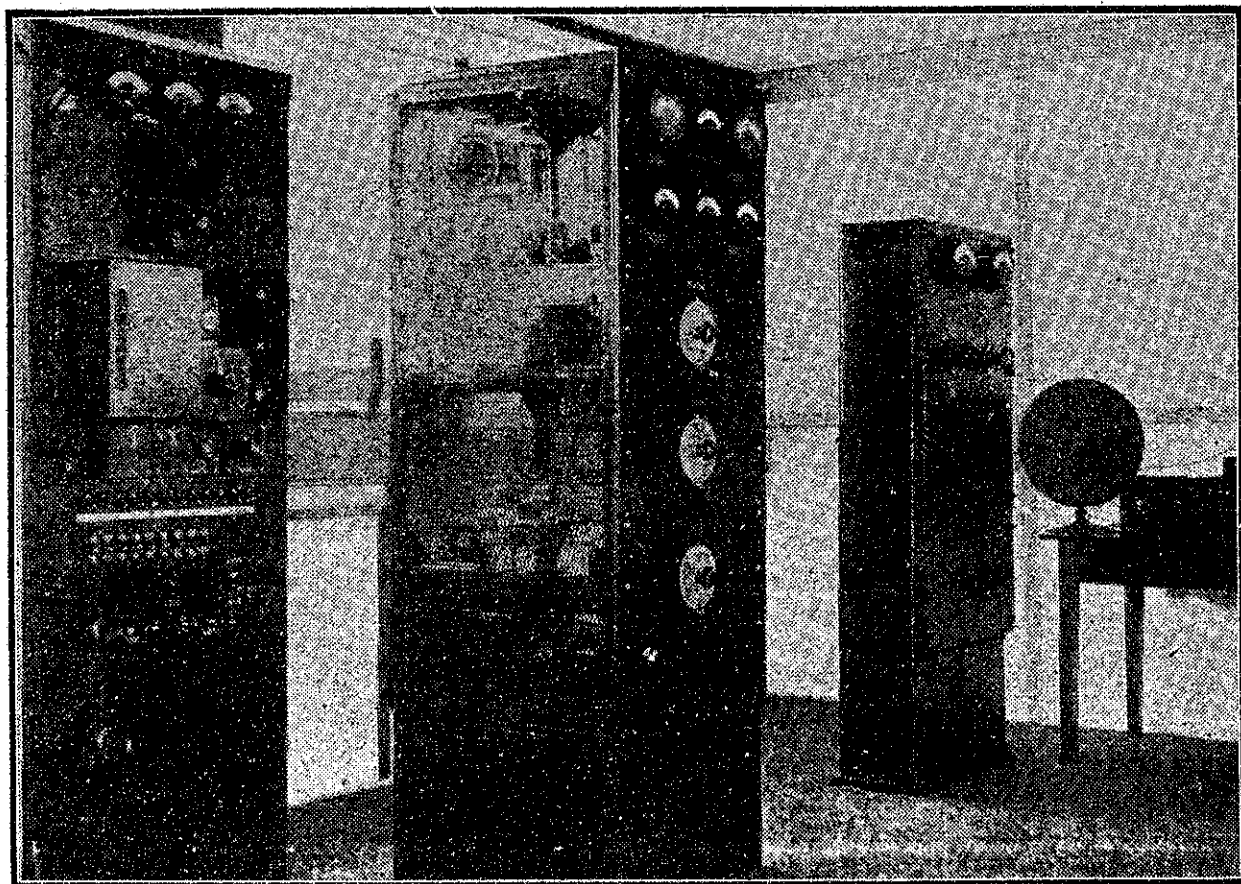
TRANSMITTER SMALL.

Compared with the average broadcast transmitter, 2XAF is small and unimpressive. Much of the success of rebroadcasting has been due to the absolute fidelity with which the radiations of the stations are kept to their stated frequency. This has been made possible by the use of a quartz crystal oscillator which holds the oscillations to an undeviating frequency.

While the average broadcast aerial requires long strands of wire suspended aerial of 2XAF is 40 feet of wire sus-



A near view of the big valves in the equipment used at 1YA, Auckland. —Shaw, photo.



Transmitting room of 1YA, Auckland. This was the first of the new stations built by the Broadcasting Company, and has given good service. It has been effectively heard all over Oceania. The voice of 2YA will, however, now penetrate even further.

ended vertically from a 50-foot wooden mast.

SHORT WAVE FREAKS.

Of particular interest is the fact that the received signal is of less strength 15 miles from the transmitter than that heard in South Africa, while 50 miles from the station no signal can be heard.

Six years ago the listener was thrilled if he heard an occasional word and a few musical notes through the static-riddled atmosphere. Later it was no unusual experience to hear stations in distant States, and then came the thrill of hearing South American, Canadian, and even occasionally an English or other European station. Now we are on the threshold of intercontinental rebroadcasting, a possibility which six years ago even the most unfettered imagination might have failed to encompass.

STRIDES IN EUROPE.

What the results of inter-continental rebroadcasting will be, none can say, but few would have the courage to scout the wildest prediction. In continental Europe to-day the listener in one country can hear the programmes of a half-dozen or more countries. A turn of the dials carries him from Norway to Spain, from Italy to England, and from each he hears a different language.

SPREAD OF LANGUAGE.

As a result, the radio stations of Italy, for example, are offering language lessons in English. A station in Norway broadcasts lessons in elementary French. Radio magazines in England, in addition to advertisements for radio sets and parts, now carry several advertisements by language experts. Will radio lead everyone to learn several languages, or will it evolve a world tongue? One tendency already noted is the elimination of dialects, thus resulting in a standardisation of the same tongue.

The development of communication has brought about greater understanding between different races widely separated by distance. In broadcasting, that great annihilator of distance, we have an instrument capable of helping to erase racial prejudice and of creating that unity of thought and purpose which leads to international friendship.

PIANO LESSONS BY RADIO

Piano lessons by radio. That is being tried over the Evening Express Station, KNX, Los Angeles, California (a station often heard in New Zealand), and, according to reports coming in, it is proving to be successful. A lady is conducting the class. All that is necessary, as the teacher points out, is a radio, a piano and the desire to learn—plus the chart that is issued for the students. This chart is free and is mailed out upon request. Several hundred have already been mailed. The instructor is on the air between 4.30 and 5 o'clock every Wednesday afternoon. Parents are using the class to test out their children's natural ability along the musical line.

SUMMER RADIO POPULAR

Officials of station KFI, in Los Angeles (California), recently made a thorough survey of the radio situation, with particular regard to the receptionists' viewpoint. The results obtained disclosed the fact that, contrary to popular opinion, the summer months do not lessen the radio audience. It was found that a large majority of vacationists take their receiving sets with them on their trips to the mountains or seashore, and further, that those whose sets were not portable, prefer to stay at hotels along the way which supply this accommodation for their guests.

Convicts in Austria are to be allowed radio sets, it is announced, with the distinction that those whose conduct merits it will be allowed the additional liberty of valve sets instead of crystal receivers.