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Activities of a Notable Year



IN the issue of December 30, 1927, the "Radio Record" referred to the year then concluding as being of an outstanding and momentous character in relation to broadcasting. That year had marked the end of a great period of building construction.

A review of 1928 also reveals what a very successful and memorable year this has been for broadcasting. It has been crowded with very important events. These events include not only most interesting broadcasts, but also important organisation work. Under the latter heading comes the formation of advisory committees—Church, music and dramatic, and children's hour—which have proved a very useful connecting link between the Broadcasting Company and the public. These committees meet regularly to discuss the aspect of broadcasting which concerns them, and they make recommendations to the company. The service being rendered by the committees is excellent.

OF the actual studio concerts, a great deal could be said, for the year has seen some noteworthy performances. All stations have continued the company's policy of engaging regularly the best talent available, so that now broadcasting stands so high in the esteem of music-lovers that to be a regular performer at any of the stations is a hall mark for an artist.

The entertainments broadcast during the year fairly bristle with feature programmes. No special occasion has been overlooked. There have been fine relays of concerts and entertainments given by local musical organisations in the cities and also such fine concerts as have been relayed from Lower Hutt and from Wanganui to 2YA. Of outstanding interest during the year was the production of the Maori Radio Pageant, a very ambitious studio effort, which was strikingly successful.

Orchestra Formed.

OF great importance to broadcasting in New Zealand was the formation of

THE past year has been impressive because of a plethora of interesting rebroadcasts of items from overseas and broadcasts direct of interesting events in our own country. This article reviews the outstanding features of the year, and demonstrates the marked advance effected during the twelve months.

2YA orchestra, a combination of the best professional players who could be engaged in Wellington. The popularity of this orchestra is now greater than ever. On several occasions the orchestra has played at entertainments given by musical societies in halls away from the studio. This was the case in connection with the two concerts relayed from Lower Hutt and on the occasion of the splendid concert given by Mr. Leon de Mauny. Such is the standard maintained by the 2YA orchestra, that its appearance on any programme is a guarantee of the excellence of the entertainment.

While on the subject of orchestras reference must be made to the combination so well conducted by Mrs. Singer, at 1YA, and to the excellent orchestra for which Mr. Harold Beck wields the baton at 3YA.

Radio Plays.

THE year 1928 saw the first serious effort at the presentation of plays. At 2YA Mr. Stanley Warwick presented "Jane." At 1YA plays produced by Mr. J. F. Montague and the Auckland Players have been almost regular attractions. Commencing with "Mary, Mary Quite Contrary," "Oliver Cromwell," "The Importance of Being Earnest," and "Mac-

beth" have followed. There have been many sketches and a very welcome variety has thus been introduced into the programme.

Rivalry Between Stations.

IT is not the place here to make comparisons between the various stations, which mutually rival each other in the service which they provide. Each of the four stations has had marked successes. A very desirable spirit of friendly competition exists between the various stations and each is anxious to secure something that the other cannot get. All stations are instructed to feature every event that can be adapted to radio broadcasting, whether it be the visit of an important personage, an historical happening, football, racing, trotting, boxing, wrestling—anything, so long as it is interesting.

Outstanding Rebroadcasts.

DURING the year the stations have shown very commendable enterprise in regard to topical events happening not only in New Zealand, but overseas. The rebroadcasting of the signing of the Kellogg Peace Pact in Paris was a splendid effort. Armistice Day in London was the call for further rebroadcasts of 5SW. The Australian stations were, this year on several occasions, rebroadcast, for the benefit of crystal-set users. The most notable of these rebroadcasts were in connection with the Eucharistic Congress which was held in Sydney. The description of the Melbourne Cup race was also rebroadcast. Of very recent date is the visit of the Byrd Antarctic Expedition, in connection with which 4YA secured the honours, Commander Byrd broadcasting on two occasions.

Historic Events.

NO doubt, when the year is looked back upon, the broadcasting features which stand out most prominently to the mind are such occasions as the trans-Tasman flights, the Heeney-Tunney fight, and the election results.

—Continued on page 3.

(Continued from page 1.)

These were epoch-marking events and were outstanding feats of which the Broadcasting Company may well be proud. Among topical features handled by the stations the trans-Tasman flights must stand out pre-eminent. The first of these was the ill-fated effort by the New Zealanders Hood and Moncrieff, when the broadcasting stations kept up a service till 2.30 in the morning, in an effort to keep New Zealand supplied with the latest news. On the occasion of the flight of the "Southern Cross" from and back again to Australia, the four stations supplied a wonderful service and listeners-in had a thrilling experience that they will never forget. In fact, as the years pass the privilege of having been able to listen in on those historic occasions, and particularly on the flight back to Australia, will be more and more appreciated.

Marred by Racing Ban.

DURING the year the Racing and Trotting Conferences met and decided that the broadcasting of running descriptions of races was harmful to the interests of the clubs. Broadcasting from the course was therefore banned. Since then the company has continued to supply an excellent service despite the disadvantageous conditions and listeners are very ap-

preciative of the company's efforts in this respect. The ban has resulted in racing losing much valuable publicity and in arousing a feeling of antipathy towards the racing and trotting authorities. This antipathy may or may not be reflected in the totalisator figures of late, the decline in which is a serious matter for the clubs. It is, at any rate, certainly manifest that the ban imposed on broadcasting from the racecourses has not had the result which the racing authorities anticipated. On the contrary, it would seem the clubs have suffered severely from the loss of the broadcast publicity and the goodwill of the public.

Sport Well Catered For.

SPORT generally, including racing, has been well covered by the four stations. Boxing contests figure frequently on the programme for Dunedin, Wellington, Christchurch and Auckland. The Dunedin Boxing Association had a very successful year and forwarded a letter of thanks to the Broadcasting Company. In the other three cities the boxing authorities also gave broadcasting every facility. The first wrestling matches ever described for radio in New Zealand took place last month in Auckland. For the first time, too, last year, international tennis matches were described, the occasions being the visits of the French and British teams. The international Rugby (Australia v. New Zealand) and League (England v. New Zealand) matches were also broadcast, just as were the cricket tests between Australia and New Zealand. Motor cycle races, with all their thrills, were put on the air. Swimming races have been described.

Musical Equipment.

DURING the year the company has been steadily building up its library of music. This is kept in Christchurch, which is the centre of distribution for the artists at the four stations. The regular performers prepare and rehearse special entertainments, for example, popular musical plays, operas and solo items, the music for which is sent from Christchurch. Gramophone records, too, now form a large library at head office. There has been a growing demand for recordings by the world's best artists, electrical reproductions being almost perfect nowadays, so the company has been introducing judiciously a limited number. The Broadcasting Company is advised of and tests the best of the latest releases and from these the cream is taken.

THE gramophone items have been the subject of many appreciative letters from listeners, for their introduction into the programmes has vastly improved the studio entertainments without in any way interfering with the engagement of the best local artists. The way in which records can be used has been demonstrated in the lecture-recitals which have been given at IYA and in such productions as "The Gondoliers" and "The Valkyrie." In both cases, the necessary explanatory matter preceded the records, which were made by some of the world's best artists.

The year's operations have more than ever firmly established the Broadcasting Company's position as the greatest musical organisation in New Zealand.

Maori Pronunciation and Lore

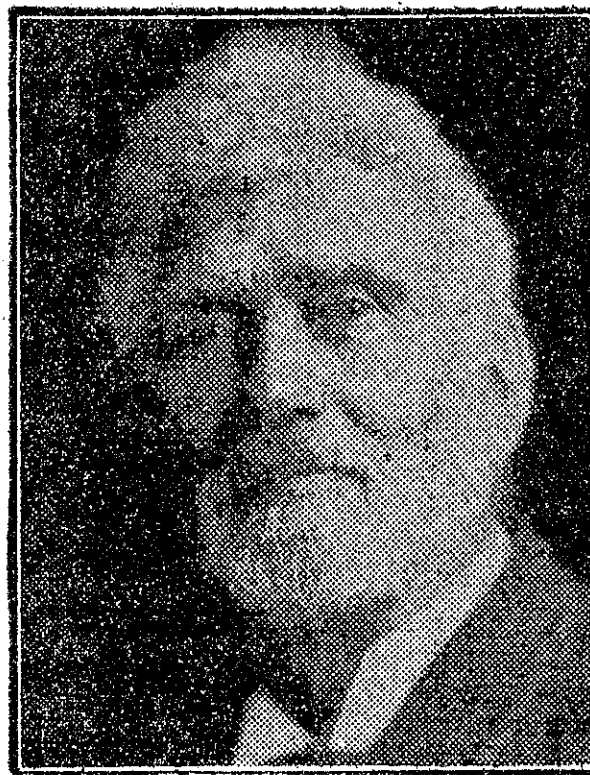
Intensely Interesting Talks Arranged

THE latest to join the numerous band of broadcasters is Mr. Henry M. Stowell, perhaps more widely known as Hare Hongi, the bosom friend of the late Timi Kara (Hon. Sir James Carroll). Hare Hongi has consented to broadcast the correct pronunciation and the meanings of Maori place-names, phrases, etc. His talks will begin on January 7. We append a few particulars of his career.

He was born under a kauri tree (which is still standing) at the head waters of the Waitangi (Treaty of Waitangi) River, Waimate, Russell, North Auckland, on the 4th day of February, 1859. His grandmother, Maumau, belonged to the hereditary

Championship Cup, against the best of Auckland's runners. In doing so he established the peculiar record of winning all three distances; first in the 100 yards, first in the 220 yards, and first in the 440 yards.

As the boy grew up he became convinced that—in many important respects—the Maori language was superior to the English; that opinion he holds to-day. And, by his ardent wooing, the Maori language has been induced to yield up many of its ancient and most secret meanings. Those which were not strictly tapu or ceremonially-restricted, he will broadcast. He assures us that in the course of his long and interesting career, he has known of but one out-and-out qualified interpreter—one of whom it might be said: "He is a master of the Maori language."



H. M. Stowell, Esq.
—Photo, Andrew.

HARE HONGI gained a wide knowledge of Maori lore by sitting at the feet of its aged and best exponents, tohungas. These took as much pride in teaching it to him, as he did in the acquiring of it. For more than fifteen months, at Waitaha (near the Ninety-mile Beach), he lived with Nga Kuku Mumu, whom he regards as being the most capable and efficient master and teacher of that wonderful lore. In the study of that lore, Hare Hongi has twice traversed New Zealand, from end to end, from the North Cape to the Bluff. In 1890 he was specially engaged to collect and set down for record what he could of its modern remains. That embraced such subjects as the Maori belief in the evolution of the world, for that was, in fact, an evolution, and one that is still in progress; Maori teaching on the evolution of man; the religious faith of the Maori; his knowledge of such an abstruse subject as astronomy, the science of genealogy, and so on.

Hare Hongi has published a textbook on the language, entitled the "Maori-English Tutor and Vade Mecum" (Whitcombe and Tombs), which is the standard authority on the subject.

FOR publication in London he has recently forwarded the manuscripts of a life-work, "The Strange Maori." That MS. has been submitted to Sir Robert Stout, and after reading it, in a foreword Sir Robert says: "This is a great book . . . and no book that has yet been published gives such a graphic description of the past Maori life . . . the writer's autobiography is unique. We learn from one part of the book much of Maori learning and of the psychology of Polynesians. It appears that the Maoris had a notable man whom the writer calls, 'The Maori Christ.' The life of Tawhaki . . . is certainly as full of incident as that of any man known to history. His fame has apparently spread to several Pacific island groups . . . The ancient history of the Maori is dealt with and that necessarily includes the much-debated question of the whence of the Maoris."

Sir Robert concludes: "This work can be recommended to anyone desir-

ariki (first) family of the Nga Puhi tribe, "the Loyal Nga Puhi," of which family, too, the notable chiefs, Hongi and Titore, and others, were members. Maumau was married by the Rev. Petit-Jean to Matthew Farley, shipwright, a descendant of the persecuted Huguenots, whose family escaped and settled in Kent, England. There was a family of four, all being daughters. These Farley named after his four sisters, and of these by her marriage with John S. Stowell, Huhana (Susanah) became the mother of Hare Hongi.

LAUNCHED into that purely Maori world, the boy learned his AB's at Singer's School, in Parnell, Auckland. From there he was placed, by Sir George Grey himself, in the Three Kings College, with the advice to learn as much of the English language and history as he could, and impart it to his Maori people. Governor Grey also advised him—quite unnecessarily though—to hold fast to his Maori language.

A well-known figure in the athletic field, he was a first-class rower, wrestler and runner. In 1876 he carried off the Northern Wairoa

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The Radio Service Reviewed

A Comprehensive Record

(To the Editor)



WOULD be grateful for a little space in the columns of your interesting journal to record my opinion of the efforts made by the Broadcasting Company to cater for its ever-increasing circle of listeners.

I have just concluded a comprehensive six months' tour of New Zealand, and have been fortunate enough to have listened to all New Zealand stations. Criticism to be instructive must be impartial, and I hope no offence will be taken by the Company concerning my remarks.

Firstly, I desire to inform you that I have not the least cognizance of the inside management of your New Zealand stations.

Transmission.

THIS important aspect of broadcasting is causing concern among listeners and the trade. Your big station, 2YA, I regret to say, is subject to spasms of distortion, and lack of quality. At other times the transmission is flawless. From what I have learned in New Zealand, the general opinion is that a superior service from 2YA would be obtainable if the power was reduced and running expenses made lighter. I concur with that view, and think it would be advantageous to the Company. As license figures will fall or rise on 2YA's service, the Company would be well advised to make any improvement immediately.

3YA is the most consistent and reliable station operated by the Company, and it has surprised me the volume tonal qualities this station possesses. 1YA, Auckland, is doing splendid service in that district, although bad fading does not make it a reliable station for southerners. 4YA, although working under adverse conditions, I understand, is gaining the confidence of the public, and their programmes are generally very acceptable.

Programmes.

A PART from the noteworthy broadcasts given listeners from time to time (the "Southern Cross" flight being handled splendidly), there is a decided improvement necessary. Variety is needed by the listening public, and to many listeners grand opera is rendered far too often by your stations. Practically sixty per cent. of your New Zealand listeners are lovers of popular music, and when I say popular music I mean items the public know, "The Gondoliers," "In a Monastery Garden," etc. Novelty items will increase

ing knowledge of the great Polynesian race. No work has come from the Maori people, or indeed from any people, that can displace it. It is more than an autobiography, for it includes the history of the ancient Maori people, and gives short stories equal to those found in popular magazines. There is indeed not a dull page in the work.

Such, briefly, are the qualifications of Hare Hongi, who will presently broadcast the pronunciation and meanings of our Maori place-names.

licenses, and I would earnestly suggest the Company include popular items in their programmes, irrespective of what it is, ballad, band, operatic, or grand opera. I have conversed with many farmers re radio, and their reason for not taking it up is that after a day's work they do not want to sit and listen to "high brow" music. A dinner session composed of cheerful items would suffice to please your farmer listeners. I trust the Company will give this important matter their very careful consideration. I wish to congratulate Mr. George Ellwood and his orchestra at 2YA, which has no superior in the Southern Hemisphere.

Afternoon Sessions.

A POPULAR session, items well chosen and rendered. Would suggest short lectures and subjects suitable for lady listeners.

Children's Session.

DOING splendid work among our young and enthusiastic listeners. As far as 2YA is concerned, I am emphatic when I state that their children's sessions are the best conducted in the world to-day. This statement I make after listening to all the prominent stations of the world during my three years' tour. Congratulations, Aunt Gwen.

News Session.

INDISPENSABLE to a broadcasting company. To my mind not allotted enough time. Every item of news of interest to listeners is broadcast.

Sporting Session.

UNDOUBTEDLY the most popular branch of broadcasting in New Zealand. In this country you are true lovers of sport, and you should be proud of the success of your famous athletes. I cannot understand why the Racing Conference has been so narrow-minded as to refuse permission to broadcast racing events. In Australia the clubs have received tremendous advertising from radio; racing is the most popular session at my own city, Melbourne. The clubs have never suffered from broadcasts in Australia. In fact, it has increased the popularity of many clubs, and drawn thousands to their meetings who otherwise would take no interest in the sport. I am an owner of four thoroughbreds, and a steward of a metropolitan club in Australia, and for the life of me cannot understand your authorities' decision. That the Company realise the majority of listeners desire sporting information is proved by the inauguration of "2YA Special Sports Service." I want to inform the Company here and now that this service is obtaining more licenses monthly than any other branch of their services. The "Service" is being highly praised all over New Zealand, and the Company are to be highly commended for their enterprise. The service rendered during the Test cricket match of results and de-

tailed reports promptly is receiving the thanks of all sporting enthusiasts. Considering no running descriptions of racing are permitted, and the limited finance at your disposal, I doubt if a better sporting and news service could be given from the studio than that at present given by 2YA. The expenditure is amply justified by the expressions of praise throughout the whole of New Zealand.

The improvements necessary in this department are:—

- (1) More relays from scene of activity, particularly so in case of 2YA (with power reduced as suggested, making operating expenses lighter). Should be able to provide the best sporting service in Australasia.
- (2) Talks to listeners on sporting by reliable authorities.
- (3) Cut out unnecessary relays of fixtures likely to interest only local fans.
- (4) A continuation of your summary of sporting results at 10.45 p.m., especially for distant listeners.

Lectures.

THESE have a great appeal to many listeners, but some lectures recently given do not warrant the station remaining on the air.

Announcers.

THE Company are indeed fortunate in possessing some very fine announcers, men who have the entire confidence of listeners. Their speech is forceful, pronunciation excellent, and general delivery of speech of high standard. 2YA's announcer is certainly the most popular in New Zealand.

The Trade.

THE radio trade in this country do not give the service required of

listeners. They lack interest (with few exceptions) in their clients, instead of imparting their knowledge gratis at all times. In fact, I consider there are too many in the trade, and not enough "experts."

Amateur Radio Societies.

DOING splendid work, but lacking the co-operation of all listeners. The work is left to a few, and no beneficial results will be obtained unless the numerical strength of the societies is increased.

The "Radio Record."

I WOULD be lacking in my duty if I failed to record my appreciation of your journal. It is the most compact, interesting, informative and instructive radio magazine at its price (3d.) in the world. I am so pleased with it that I have forwarded two dozen copies of the "Souvenir Number" to my friends in various parts of the world, and I will be very pleased to forward any suggestions they may desire to offer.

I regret that I have taken up so much of your valuable space. I am leaving New Zealand this week, and will carry away with me cherished memories of my visit to your beautiful country, made more enjoyable by radio. Before closing, I would like to thank through your widely-read columns the many kind radio enthusiasts who permitted me the use of their wireless equipment.

For the destructive critic, "The Growler," I enclose for his perusal a copy of the winning letter of praise concerning 4QG, Brisbane.

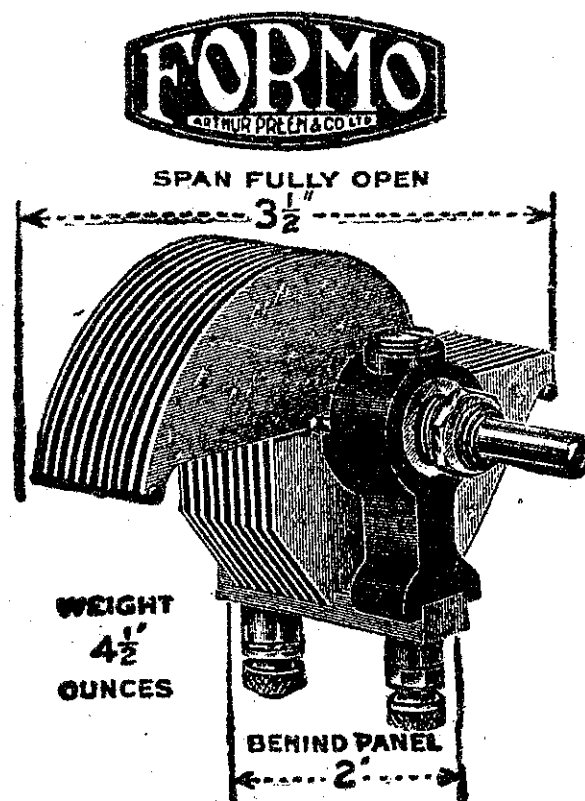
With my best wishes to the Company,

I am,

Yours faithfully,

F. C. COLLINS.

EVEN the best loudspeaker cannot give good results on a poor set, and as a matter of fact the better the loudspeaker the more it will show up the imperfections of the receiver to which it is attached.



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New Wave Lengths for Amateurs

The Secretary of the Post and Telegraph Department advises that consequent upon the Radio-Telegraph Convention held at Washington last year, it is necessary to revise the frequencies (wave-lengths) in use for amateur transmitting stations. The allocation of the frequencies to operate under the new Convention from January 1, 1929, are as under:—

All amateurs: Bands, 1750-2000 kilocycles (approx. 150-171.4 metres), and 3500-4000 kilocycles (approx. 75-85.7 metres).

In addition, those amateurs who have been given permission to operate on the band of 36-37 metres to use the band 7000-7300 kilocycles (approx. 41.1-42.8 metres).

Amateurs desiring the use of the higher frequencies, namely, 14,000-14,400 kilocycles (approx. 20.8-21.4 metres), 28,000-30,000 kilocycles (approx. 10-10.7 metres), and 56,000-60,000 kilocycles (approx. 5-5.35 metres), to make special application to district radio inspectors, supported by evidence of their qualifications for such special concession.

New Studio for BBC

BROADCASTING House, the new home planned for the British Broadcasting Corporation, will not be ready for occupation for about two years, but it will then be probably the most unique building in London. It will have the finest studio in the world—a studio capable of accommodating a thousand artists.

Auckland Notes

By "Listener."

EVERY listener in Auckland is awaiting the radio Christmas, which 1928 will assuredly be. Dealers are finding trade more brisk than was anticipated, and registrations of sets are mounting apace. Permits for transfer of receivers to beach cottages and country camps have been issued in quite a considerable number, though it is feared that many break the regulations by removing their sets without first receiving the sanction of the Postal Department. Radio equipment is rapidly becoming a recognised part of the gear required for a summer season at the seaside, and that favourite holiday spot, Waiheke Island, bears testimony to this in many improvised aeriels which are to be seen by the cottages on its many beaches. Most set-owners would be thoroughly ashamed of such aeriels in town, but for holiday purposes they are effective, and that is the chief consideration. The portable set, too, can be found at many a picnic spot, and it is kept going for the full time that 1YA is on the air. The racing news which it picks up seems to be the principal attraction for a large number of campers. Radio on the launch is now the recognised thing among the big fleet of pleasure craft that will be away from their moorings for the Christmas cruise. To the yachtsman and launch owner the wireless news supplants the newspaper, and the radio set aboard is more useful and more entertaining than the gramophone. At Russell and Tauranga, during the regatta periods in these towns, there are hundreds who will enjoy a restful evening aboard their craft, listening to the special programmes, and discussing eagerly the news of other sports which only radio could bring so freshly to them.

LAST week I prophesied that the broadcast account of a poorly patronised wrestling contest would give this sport the finest advertisement that it had had in the Dominion, and that the next contest would demonstrate this. How true the prophecy was could be seen by the huge crowd which gathered at the Town Hall on Monday last for the return contest between Kilonis and McCarthy. Again, through the courtesy of the Wrestling Association, the microphone was there, and in front of it was Mr. Gordon Hutter, who made such a success in his first description of the struggle on the mat. This success he repeated on Monday, and again wrestling was given a wonderful advertisement as a result. It is hard to say how many thousands listened in on the night when 1YA is usually silent, but the fact that the station came on the air with this special service was fully appreciated.

LYING in port at present is the Danish vessel "Dana," which is engaged in scientific work in the Pacific. To wireless enthusiasts she possesses special attractions, her long and short-wave transmitters and receivers being remarkably compact and efficient. All of the radio equipment was manufactured in Denmark, and so good is it that the officers and scientists of the little expedition are never out of touch with their own little country, now in

the grip of a northern European winter. The Danes hear nightly in their own language, the news from their homeland read out from Danish papers in Copenhagen. Regularly they hold communication with their relatives in the homeland. For them wireless has completely annihilated the distance which separates them from their native country. One can well imagine how much use will be made of the "Dana's" transmitter during Christmas.

ALREADY we have heard the first of our Christmas music. From 1YA on Tuesday was broadcast, under Madame Ainsley's direction, a most creditable rendering of the "Messiah." It will be followed by other music and story suitable to the season.

1YA is right up to the minute with its sporting announcements, and its nightly particulars of Australian cricket are eagerly awaited.

THE local dealers are endeavouring to make the Auckland City Council see the error of its ways in its decision to charge so exorbitantly for Municipal Band relays. It is to be hoped that the effort meets with success. Listeners too, might well lend their weight to the representations which have already been placed before the Council. We could well do with the excellent carol programme which the Municipal Band renders each year, and that we are not to have it is due merely to the shortsightedness which the City Council has displayed.

Phantom Voices

Uncanny Experiments Mystify Golfers

GOLFERS on the South Lodge and Mitcham (Surrey) courses heard a phantom voice coming from the mist hundreds and sometimes thousands of feet overhead.

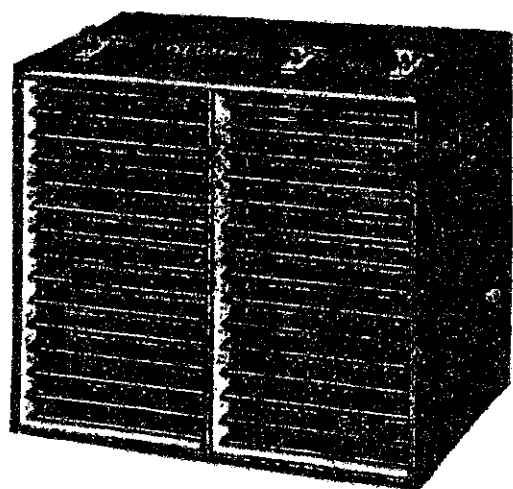
It was some time before they realised that the voice was that of the pilot of an aeroplane which flew over the area for half an hour. Every now and then the pilot cut out his engine, and then came the ghostly voice from the clouds.

In this talk he glided across South Lodge golf course at a height of about 1000 feet, and it was an uncanny experience for golfers to see the plane emerge from the mist, then disappear into it again, while all the time the ghostly voice talked in deliberate, heavy, but muffled tones.

After half an hour the aeroplane, flying low, went off towards Croydon aerodrome, leaving a mystified crowd gazing vacantly skyward.

It was ascertained later that tests were being carried out between the aeroplane and a ground staff to estimate the possibility of "broadcasting" megaphoned speech from the air.

A PARIS journal states that a group of members of Parliament, representing agricultural districts of France, have decided to appeal for special funds out of which to advance loans to farmers desiring to install good radio sets.



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Battery in the World

—The Columbia Layerbilt

NEVER before has it been possible to utilize every cubic inch of battery to produce power. The new Columbia Layerbilt "B" Battery has accomplished this.

Made of flat layers of current-producing material instead of the usual round cells, not a cubic inch of space is wasted. You get more battery for your money, far more energy, greater clarity, volume and distance from your receiving set. There is not another battery like the Columbia Layerbilt—Insist upon it.

Columbia

RADIO BATTERIES

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Auckland

"BROADCASTING," a lecturer said in the course of his remarks, "has gone far beyond all early expectations. Its pre-eminence to-day is due in large part to intelligent public interest and the appreciation of radio possibilities by technical and merchandising organisations and the support they have given to its development. I am told that a series of programmes is soon to be put on over a chain of no less than 28 stations by a prominent American motor enterprise."

A LIST of the countries of the world whose amateurs are now actively engaged in effecting two-way international private communication sounds like an index to the atlas. The present list, which is being added to daily, is as follows:—Australia, Austria, Argentina, Alaska, Algeria, Belgium, Bermuda, Brazil, British Guiana, Bolivia, Canada, Chile, Canal Zone, Costa Rica, Columbia, China, Cuba, Czechoslovakia, Denmark, Dominican Republic, England, Egypt, France, Finland, French Indo-China, Germany, Greenland, Holland, Hawaii, Italy, India, Ireland, Japan, Luxembourg, Mexico, Morocco, Mesopotamia, Madeira Islands, New Zealand, Norway, Newfoundland, Portugal, Porto Rico, Philippine Islands, Russia, Spain, Scotland, Sweden, Switzerland, Samoa, Tasmania, Uruguay, Union of South Africa, United States, and Venezuela.

THE official opening ceremony of the new 5CL Studio will take place late next month. The equipment of the studios will be the most modern and efficient in Australia, and many improvements will be installed which will enable transmission to be made as perfect as possible. Further improvements in the programmes are contemplated, and novelties will be introduced which hitherto have been impracticable, and which the arrangements at the new studio will facilitate. A special jarrah dancing floor is being constructed in the largest studio, and provision is being made for regular dance nights, similar to those of 3LO, Melbourne.

THE only broadcasting aeroplane in the world is heard by WLW listeners every day at approximately 3.47 p.m. It is the Whirlwind Waco plane, which carries the air mail from Cincinnati to Indianapolis and Chicago. An especially sensitive microphone, mounted on the water tower of the Cqsley Radio Corporation factory, where the WLW studios are located, picks up the full-throated roar of the engine as it passes with its throttle "wide open" 1500 feet above the ground. Since the plane travels at a speed of about 120 miles an hour over the studio, its broadcasting is brief. However, its daily repetition delivers the same message: "Use the air mail." WLW listeners report that they look forward to the momentary zoom of the plane. It is "something different," they say.

RECENTLY the North Taranaki Radio Society has been assisting the local radio inspector is tackling down "howlers." By means of a sensitive receiver operating from a direction-finding loop, transported by motor-car, it has been possible to check-up on interference and reception generally in all parts of the borough. While it seems that howlers have an uncanny intuition when the inspector's car approaches their vicinity, and switch off, it is apparent that many people who should know better are not operating

their receivers with as much consideration for their neighbours as they should have. The moral of this paragraph is: If your receiver can oscillate, don't let it—the radio car may be outside.

THE "New York Sun," in good humouredly chaffing the prospects of radiovision, says: "The owner of a two-valve set will soon be able to get everything a picture house can offer except the ultra-polite ushers, the lobby statuary, and the bar outside the box

and 2LO. On the following day part of a London programme is to be given to Cologne.

RADIO experiments on airships during the past year have met with considerable success, according to the Air Corps of the United States War Department. Previous experience with signal corps sets demonstrated the feasibility of excellent transmission, but no results were obtained for reception, the principal trouble being inter-

Rivals of the B.B.C.

THERE is a likelihood of a serious position arising in Great Britain, caused by high-powered Continental stations announcing their intention to broadcast English programmes during English broadcasting hours. For revenue, the American system of advertising is to be resorted to. Besides making wireless unpopular, for an excellent musical item may be broken into to allow a discourse on, say groceries, frocks, motor-cars, or patent pills, serious technical difficulties are bound to arise. If this latter is the case and heterodyning results, the position will be one for the Geneva Convention to settle.

office who tells you there are plenty of seats inside." Also, "The time will come when every radio set will carry a chart giving Charlie Chaplin's wavelength and the number of kilocycles it takes to get Tom Mix."

THE fifth annual Radio Show, which closed some weeks ago in New York, had an attendance of about 295,000 persons, and it is said that £7,000,000 worth of business was done with them. One specially interesting fact about the exhibitions was that the average number of valves per set was seven, a surprisingly small number for the American. One almost wonders what the two extremes were. Frame aeriels appeared to be the standard equipment, and batteries were decidedly not present.

DURING the German Wireless Exhibition a speaking film was demonstrated and attracted great attention. It is not a matter of the words spoken accompanying the movements of the actors, but one was actually transported to the scene of the action; even the slightest noise was faithfully reproduced by the instrument. The departure of a train is able to be screened, one sees the hustling, bustling crowd, hears the farewells, and all those thousands of characteristic noises that herald the departure of a train. A dance, one sees the bright glamour of the attendant colour, and hears the pleasant small talk accompanied by the shuffling of the feet over the slippery floor. In the zoological gardens one hears the varied calls of the animals. One can follow all this on the screen. The synchronising during these experiments was perfect.

THE B.B.C. scheme for the relaying and exchange of Continental programmes is progressing. Listeners hope to hear the Legia Choir from Liege on March 11. The transmission will be made by land line via Brussels, Ostend, and La Panne, then by submarine cable to Thanet, on the Kent coast, and by land line to Canterbury

thought that radio waves may be used for this purpose.

OF the towns of Belgium, Liege is considered to be the most progressive as far as the development of wireless is concerned. In this historic city there are an extra large proportion of amateur experimenters who are doing considerable work for the advancement of radio. Three transmitter amateurs, who have made enormous progress and in doing so have become renowned in Belgium, have united under the title of "trio Liegeois" (Liege trio). They have been especially active on the short waves and have recently raised their wavelength and power to provide regular programmes for the Belgians and the French. This innovation is welcomed, for in these two countries there is a lack of interest in wireless as well as a lack of good stations.

SEPTEMBER 7 marked the anniversary of the Independence of Brazil. To mark this auspicious occasion POJJ arranged a special fete. This commenced by the Brazilian national anthem or hymn, as it is called. At the special invitation of Messrs. Philips Lamps Company, M. Luiz, Guimaraes, Consul for Brazil at The Hague, presented himself at the microphone, and his speech went on the air to his fellow countrymen in far Brazil. In order that the message might reach his native country the consul spoke at midnight or 9 p.m. Brazilian time.

THE "Electrical Review" stated in a recent issue that broadcast radio telephone stations in service in Russia, and in the course of construction at the beginning of 1928, numbered sixty-four. The wave-lengths used ranged from 60.12 to 1,700, ten stations using 100 metres or over, while the power used ranges from 0.02 to 40 kw. A factory in Leningrad has just completed a combined 25-kilowatt broadcasting station which can also work as a telegraphy station with a power of 35 kilowatts. Progress in Russian radio has shown remarkable stimulation during 1928.

Special Rail Concessions for Picnic Parties

Happy indeed are the memories associated with that popular institution, the "Picnic Train"—sunshine, happy faces and joyous laughter.

Here are a few examples of the remarkably cheap return fares for picnic excursions, arranged by schools, business houses, friendly societies, trades unions, etc.:—

	Children (up to 15 years)	Adults
9 to 12 miles	7d.	1/3
21 to 25 miles	1/-	1/10
46 to 50 miles	1/11	3/3

Communicate with the nearest Stationmaster, Passenger Agent or District Manager for full particulars.

The New Zealand Radio Record

P.O. BOX, 1032, WELLINGTON.

Published Weekly. Price 3d. Subscription Post Free in advance, 10s. per annum; booked 12s. 6d.

Literary communications should be addressed: "The Editor"; business communications to "The Manager."

Advertisers are asked to note that alterations of advertisements should be in hand Friday of each week for insertion in the succeeding issue, printed Tuesday, bearing Friday's date. No responsibility is accepted for blocks remaining unclaimed three months after each insertion.

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

WELLINGTON, FRIDAY, DECEMBER 28, 1928.

WITH this issue the year 1928 draws to a close. From the broadcasting point of view it has been as memorable in its way as that of its predecessor. 1927 was noteworthy as marking the practical culmination of the building programme of the Radio Broadcasting Company. 1928 has seen those four stations working to a high average of efficiency, and rendering good service in their respective areas. A number of outstanding events have occurred during the year, and have been duly broadcast for the benefit of listeners. Some of these events originated in other countries of the world, and the New Zealand service was given by way of a rebroadcast. Others, such as the Southern Cross Flight and the Election Night, dealt with incidents in our own locality. In all phases, however, the broadcast service has advanced until it is now recognised as an unquestioned branch of community service.

WHAT will be the outstanding trend of 1929? In our opinion it will be advisable for attention to be turned now to fresh fields, in order to maintain the definite progress of broadcasting. It is extremely satisfactory to know that the old year ends with the dissipation of that cloud of apprehension which has attended the patent royalty position. The agreement effected between the Government and the Amalgamated Wireless interests, which we outlined in our last issue, is wholly satisfactory to broadcasting in general, and leaves the position clarified for unhindered development and advance in the future. The four cities and their surrounding areas of population are well served by the four YA stations, although it is true that the strengthening of the power of 4YA is desirable, and no doubt will be undertaken at the earliest possible moment. Outside the four centres, however, there are various areas of population in the provinces which offer a potential field for radio development. In the case of Palmerston North a service is being rendered to the community by the local station, maintained through the enthusiasm and enterprise of the Manawatu Radio Club. In New Plymouth a plan is on foot for effective co-operation between the Radio Broadcasting Company

and the local Radio Society. With the finalisation of details yet to be fixed, it should be possible for a distinct service to be rendered this area. In the best interests of the other parts of the Dominion, however, it would seem desirable for the problem of the rural centres to be tackled in an effective fashion. The community as a whole is now radio conscious, and as it is the areas more distant from the main centres to which radio can render the most service, those areas offer highly valuable potential markets for development. It seems extremely important to us that the record of advance established by the events of 1927 and 1928 should be maintained in 1929 by the development of a comprehensive plan for the satisfactory initiation of broadcasting in the main provincial centres of New Zealand. In the original concept of the building of the New Zealand scheme, provision was made for a number of provincial relay stations. With the popularity to which radio has now attained and the need for maintaining and developing it on an even higher level, inquiry may be made as to whether the time is ripe for entering upon consideration of the provision of these relay stations.

Radio, the Farmer's Stock Ticker

Great Influence on Stabilising Markets

"THE radio set has become the stock ticker down on the farm," writes J. C. Gilbert, the Department of Agriculture's specialist in radio market news, in a recent issue of "Farm Life" (Spencer, Ind., U.S.A.). It seems that there are now 107 broadcasting stations in America which send out market reports on regular daily and weekly schedule, and the Federal Bureau, with which Mr. Gilbert is connected, helps out by maintaining about eight thousand miles of leased telegraph wires connecting all of the market news branch offices. We read further:

"AS the service of broadcasting market reports has developed, the radio stations in the cities where the market news offices are located broadcast the quotations and flash the reports that must be handled quickly, and the summaries and reviews and comment reports are sent by mail to the more distant stations. In spite of the expense, a few stations have paid the telegraph charges on some of the reports, because the owners felt that the value of the service to the farmers justified the expense.

"From the exchange, the auction rooms, the stock yards, and the 'street,' the reporters prepare their local reports, which are flashed over leased wires to all the other offices to Washington.

"Each reporter has his own report and those from the other offices for distribution, and a wide distribution it is.

"California grape-growers are advised what New York and Boston paid for their malagas and tokays. Texas cattle shippers learn what their steers sold for in Chicago and Kansas City, and so on, all over the country the leased wire telegraph and the radio are speeding the news."

Commenting on Mr. Gilbert's story, the editor of "Farm Life" sets it down as an indisputable fact "that radio promises to do more to stabilise the markets than anything we have yet discovered."

It is the only thing giving the farmer information he can act upon immediately. For instance, down in Fort Worth, Texas, one day recently, a hundred carloads of cattle came in and there was a slump in prices. The situation was broadcast over Station WBAP by the government market reporter, and the next day there were only two carloads, and the market recovered at once. If the South-western farmers had been compelled to wait for the slower reports by mail and daily paper, the flow of cattle to Fort Worth could not have been stopped for two or three days. And in Chicago it is being noted that a broadcast of the estimates for next day's expected arrivals of live stock reacts instantly on shipments. Carloads already on the way are frequently diverted to other points if the radio says Chicago is about to be congested with cattle or hogs.



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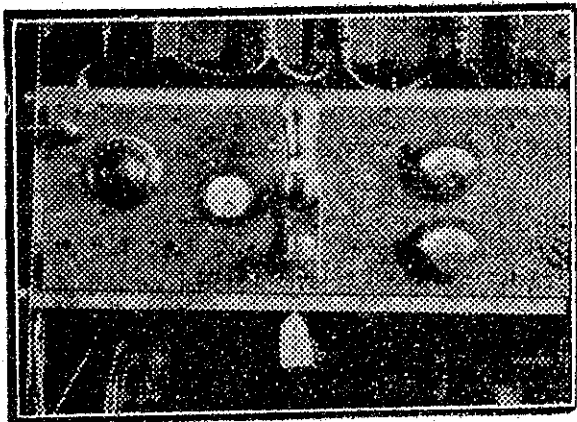
Mullard
THE MASTER VALVE

2YA To Go On Test Radio Competitions League Wireless Station

Crystal Control v. Master New Zealanders win Oscillator Success in Sydney

FOR some considerable time station 2YA, Wellington, has been crystal controlled, as are many of the foreign stations, but results have not been what they might have, and the tests should reveal whether it is the crystal that is at fault or not.

A crystal-controlled transmitter consists of a valve oscillator controlled by a piezo-electric crystal, a radio frequency amplifier, and in some cases a frequency multiplier. Owing to the fact that the oscillations generated in a crystal-controlled circuit, while re-



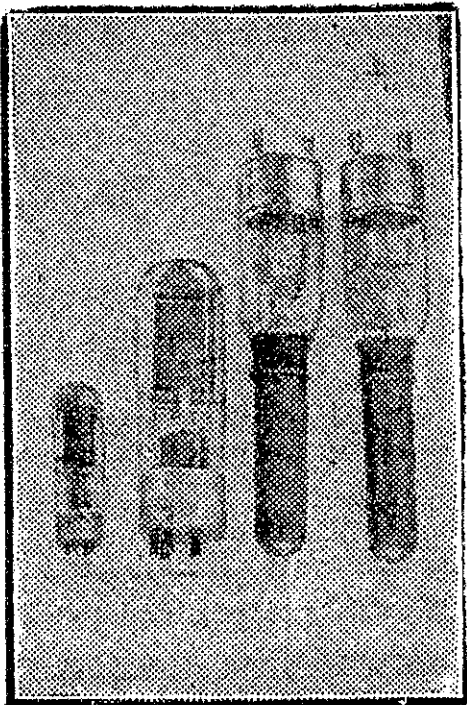
markably selective and constant, are nevertheless very feeble, it is necessary that the energy should be amplified many times before it can be used for practical purposes in the transmitting plant.

Crystals for this purpose must in the first place be clear and flawless, and then cut to a definite size. The size determines the wave-length, and unless the crystal is replaced the wave-length cannot be altered. Thus, "broad tuning," "off the wave-length," and similar complaints are impossible.

The crystal is mounted in the circuit by being placed between two conductors and so placed in the circuit. Diagram 1 shows the crystal mounted as it is at 2YA—the bone of contention.

With the master oscillator control, however, wave-length can vary by very minor alterations. There is little difference in the circuit except for the provision of another valve instead of the crystal, and a lesser amount of amplification.

This latter type is still that used in most of the big stations of the world, and certainly with careful adjustment and handling can give results well nigh perfect. Diagram 2 is the master oscillator



THE Radio Broadcasting Company of New South Wales, in conjunction with the Sydney "Evening News" and "Sunday News," with the view of obtaining new artists for radio broadcasting, have just completed a competition of some 36 sections. The cash prizes offered amounted to £250, and the studio engagements £550, making a total of £800. Section 23, radio sketch, first prize £4, and engagements £24, was won by Miss Zena Jupp, of Berhampore, Wellington. Miss Jupp won the ladies' elocutionary scholarship at the recent Wellington competitions, and is now continuing her studies in Sydney with marked success. Miss Jupp was also champion elocutionist at the Masterton competitions in 1927. Advice received by last mail states that Miss Jupp has been appointed adjudicator at the Boolaroo Eisteddfod, to be held in March, 1929. Miss Dorothea Vautier, another Wellingtonian well known at 2YA, also competed at the radio competition in Sydney, and was highly commended in section 26, impromptu announcer.

File for "Radio Record"

THE desire has been expressed in several quarters for the provision of cardboard holders for the "Radio Record," so that listeners may place them on file for ready reference. We have accordingly arranged for the provision of sturdy cardboard holders, with cloth backing and hinged front, at a cost of 1s. 6d. post free. The front is inscribed with the name of the "Radio Record," and both front and back are pierced for cord. It then becomes a simple matter to pierce each issue of the "Radio Record" with two holes, and place it on file available for ready reference on the part of listeners. The job is quite sturdy and presentable, and will, we believe, be a convenience to those enthusiasts who wish to keep copies available for perusal. Address applications, with postal notes for 1s. 6d., to Post Office Box 1082, Wellington.

Testing of 2YA

AS stated in the "Radio Record" last week, tests are being conducted this month of the two systems of control at 2YA.

Next week the systems of control will be:

Sunday, January 6: Crystal.

Monday, January 7: Master Oscillator tube.

Tuesday, January 8: Crystal.

Wednesday, January 9: Master Oscillator tube.

Thursday, January 10: Crystal.

Friday, January 11: Master Oscillator tube.

Saturday, January 12: Crystal.

INTERESTING possibilities in the development of the League wireless station at Geneva are suggested in the report of the committee of experts which has recently dealt with the subject.

The primary reason for such a league station is the need for rapid communication with council members at a moment of crisis. The objection to the installation of a league station is, of course, expense. But it is pointed out that many nations maintain at great cost all sorts of pieces of emergency mechanism needed only for use in time of war, and it is therefore the more legitimate to incur a small collective expense in the interests of peace.

The experts do not think that such apparatus, if constructed, would be of value in emergencies only. They point out in the next passage in their report that the station could make a general distribution by circular wireless telegrams of press news. Government information, and important League documents; it could organise a letter telegram service between Geneva and the more distant member States, which at present receive their information by mail, and consequently are apt to be out of touch with the latest League developments; further, a considerable proportion of the telegrams now exchanged between the

Secretary-General of the League and the different Governments, and between the Governments and their delegations, would be sent through the League wireless station. The proposal will come before the council shortly.

Tracking Power Leakages

The Palmerston North Borough Council has decided to purchase, as suggested by the Manawatu Radio Club, a fault-finding set, at an estimated cost of £30, to locate radio interference. It was pointed out at a meeting of the council recently that not only would the set be useful from that point of view, but it would be valuable for detecting power leakages wherever they exist.

Sir Charles Statham Broadcasts

3YA took the opportunity of the laying of the foundation stone of a new wing of the Cathedral Grammar School to carry out a relay on the afternoon of Sunday, December 16, after which a studio concert was given.

There were some interesting speakers at the stone-laying, one of them being Sir Charles Statham, Speaker of the House of Representatives.

"Baby Grand" £3/15/-

"Junior" £5/5/-

Philips De Luxe Speaker "PCJJ" £6/10/-

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A CRITERION!

The Baby Grand Piano! A term that immediately suggests a piano gracing the home of one who demands the best as his right.

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The B.B.C. Rejects Television

Yet in Experimental Stage



WITHIN the last few months notable developments in television have taken place in England in connection with the Baird system. Mr. John Baird, a Scottish inventor, recently floated a company to finance his inventions in television. The shares were rushed, and in a few days all were absorbed by a gullible public.

It was claimed that the system known as the Baird System was a revolution in the science for which extravagant claims were made. For some time the developments were kept a close secret, till at the Olympic exhibition the first demonstrations were given. As, by the regulations of the exhibition, demonstrations were not allowed to be given in the exhibition buildings, a small room near by was chosen for demonstration purposes. Some three-quarters of a mile away were the subjects to be televised.

The First Public Demonstration.

AN eye-witness of that memorable event tells the following story of the first public demonstration of television in the British Isles:—

"I was taken to what looked like a fairly large vertical radio set, with a screen in the centre. The operator then tuned the picture in—turning a knob, just as one does in ordinary tuning in—and gradually from a blur came up the image of a man who was seated. As the picture was tuned in, so did the man's features become clearer and sharper, until his hair, his eyebrows, and eyelashes, and the curves of his mouth were easily discernible.

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Five of the special advantages are explained in the new leaflet, copies of which may be obtained from any Office or Agent of the Public Trustee, or free by post from the Public Trustee, Wellington.

B2

"He opened his mouth and said 'Good afternoon.' The voice sent over the ether by wireless was clear, and one would have believed the speaker to be in the room.

Voice and Action Synchronised.

"QUITE easily and quite naturally he began talking about the weather and what he intended to do. At my side was a telephone connected

TELEVISION, or should it be more correctly termed radiovision, that is the transmission by radio of moving images, has been deemed by the British Broadcasting Corporation unworthy of trial from their stations. This is not to be confused with radio photography, about which another article appears. This is an important decision and reflects the opinion of a world authority on this new science.

with the studio in which he was sitting.

"If you want to talk to him, speak into the telephone," said the operator at my side to me.

"I can hardly believe this is true," I said. 'Sing me a song.'

"Without a moment's hesitation I heard the reply, 'Sure, I will sing you a song. What would you like?'

"I looked at the man as he passed his hand over his forehead as if thinking of a tune, and then, with a pleased expression, he said; 'I know,' and began a negro song.

"That song had none of the disadvantages of the 'talking' film, where the voice sounds as if it was passing through a husky gramophone. Imagine listening in to the B.B.C. when atmospheric are absent and you will know how clear it was.

"And I could see him all the time. I noticed the way he turned up his eyes when trying to look pathetic, and I had to smile with him when he suddenly ended and broke into a hearty laugh. He must have guessed this, for he added: 'I did laugh, did I not? You must have laughed too.'

"The best way of describing what the picture looked like is to compare it with a kinema film taken some ten years ago. Now and again there was flicker—small lines would run up and down the glass and little pin pricks would appear, and the whole was slightly red in colour like the first proof of a studio photograph—but from beginning to end the face was always clear and the features easy to recognise."

The Effect of Distance.

A FURTHER demonstration took place and the result remained the same. Concluding his remarks the writer says:—

"The performance had taken place in semi-darkness, although the performers were in daylight.

"I asked permission to pull the curtains aside and expose the screen to the light. This I was allowed to do, but the picture remained just as clear.

"Has distance any effect on reception?" I asked Mr. Baird.

"None at all," he answered. "This experiment at three-quarters of a mile distant could just as easily be done across the Atlantic. Of course, if there was much atmospheric, the voice would be affected in precisely the same way as any radio voice thrown across the Atlantic would be affected."

"It was a memorable afternoon. I had taken part in a performance which is probably to be the forerunner of

an achievement that will soon take its place in our everyday lives."

Opinion of the English Press.

THE event had been given a leader in an English paper, and it seemed that television had come to stay. Receiving instruments were offered for sale provisional to the Post Office granting the necessary license. One of the leading scientists, Dr. Ambrose Fleming, Emeritus Professor of Electrical Engineering at University College, London, in a foreword to "Television," by Alfred Dinsdale, published recently, stated:

"Television in 1928 is very much in the same stage of progress as wireless telegraphy was about 1900 or 1901; but it may not take nearly so long to bring it to practical perfection, because many of the problems involved have already been solved."

Dr. Fleming has been intimately associated with the development of all the great applications of electric science in the past 25 years. He was the inventor of the thermionic valve which made wireless telephony possible.

"What the public chiefly wish to know," Dr. Fleming continues, "is whether it will ever be possible for us to receive and see in our own homes the reproduction of distant events, such as the King going to open Parliament, or the exciting finish of the Derby race, just as we can at present hear by wireless the description by speech of such events.

"It may be said at once that there is no inherent impossibility in it; all inventions require time for their ultimate development and perfection.

"The great obstacle to wireless television lies not so much in the television apparatus itself as in the disturbances caused by fading, Morse signals, atmospheric, and other causes, which also mutilate wireless broadcasting of speech or music.

"The overcoming of these obstructions is, however, largely a matter of the amount of power employed in the

transmitter. The subject of television may now be said to be a 'live' one. It has passed out of the region of merely imperfect or curious laboratory experiments into that of practical demonstration. Hence it has begun to interest the general public who attach no great importance to purely scientific investigations, but only to that which possesses in their view a practical value—by which they mean contributing to the convenience of life, or to its amusement or the dissemination of information and news."

Another Baird Invention.

DR. FLEMING discusses another invention by Mr. Baird of a gramophone with two needles—one for the ordinary reproduction of sound and the other giving the "living" picture of the people performing—which was first announced in the "Morning Post." He says:

"Just as in the modern electric-cut gramophone records the electric current from a microphone is made to actuate the cutting chisel on the soft, or master, record and yield the records on which we can reproduce the music or the speech, so also we can use, as Mr. Baird has done, the amplified current from the photo-electric cell of a television transmitter to move this chisel and so impress on the disc a record of an image instead of a sound.

"By means of a suitable televisor this record can then be reproduced as a visual image. Also, we can at the same time record a sound or speech."

The View of the General Post Office.

BY this time public interest had been properly aroused and as sets had been ordered at the Exhibition provisional to the agreement of the Post Office and the B.B.C. a demonstration was arranged in order to gain the consent of the Post Office before the matter was taken to the B.B.C.

A special television experiment was performed before two representatives of the Post Office. Mr. Baird sent the image of the director of the Television Press which publishes the official organ of the Television Society, from his office to a club, where it was reproduced with success.

"As a result of the demonstration, our engineers decided that the Baird television system had reached a stage where further experiments of a more practical nature might be worth encouraging."

This was the verdict of the British Post Office.

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Verdict of the B.B.C.

THE B.B.C. were consequently advised that no objection would be raised to their instituting experimental television transmission if they desired to do so. Consequently the B.B.C. asked for a test.

As a result a demonstration was held on October 9 which was attended by Captain P. Eckersley, chief engineer to the B.B.C., and other technical and administrative representatives of that authority.

The opinion of the representatives was that, while the demonstration was interesting as an experiment, it failed to fulfil the conditions that would justify a trial through a B.B.C. station. The corporation concluded its official verdict by stating that it would be ready to review its decision if and when developments justified.

AS a result of the decision a director of the Baird Company told a newspaper representative that he and his co-directors were far from satisfied with the decision of the B.B.C., and that they would not take the matter lying down. It has been stated in the "Daily News" that the Baird Company do not think they have had fairplay. They may decide to go abroad and erect the necessary transmission station for the benefit of subscribers in England and other countries.

Sir Oliver Lodge, Dr. Roberts, Dr. Lee de Forest, Captain Eckersley, and other English experts have from time to time pointed out in clear and concise language and with strict impartiality the limits of present television systems. There is a consensus of opinion that until some radical and new discovery is made no system of television is likely to prove of any public service utility value. The present systems are essentially experimental, and suited only to the laboratory.

Interpretation of this Decision.

THIS momentous decision of such an authority as the British Broadcasting Corporation clearly indicates the position of television or radiovision today. The stand taken by "Popular Wireless," the technical English journal, in supporting the decision of the corporation, stands out in clear contrast to the views of some of the leading American journals, which in each issue vie with one another in predicting the wildest "Near Futures" of television. The last publication depicts on its cover in bright colours the receiver of the "near future"—multiple television—a receiver on which are appearing moving images from three distinct sources. The American with his customary optimism has seen more in the future of present television than has the more conservative Englishman. It remains to be seen who is in the right, if either; the B.B.C. may be too conservative, but in announcing its decision it is bearing in mind the fact that it has the interests of the English people to safeguard, and any unwarranted move may cause consternation among licensees.

The corporation is a Government organisation, and their decision denotes the attitude of the British Government, which has always been regarded as a world authority. To have accepted a system of which it had its doubts and which might subsequently prove to be

Direction-Finding

THE use of radio for direction and range finding has made great strides in the past few years, especially in the development of directive beacons for sea and air navigation. The United States Coast and Geodetic Survey has recently developed an interesting method of range-finding which makes use of both sound waves and radio waves. In making depth measurements off the coast it is frequently necessary for the survey ships to be out of sight of land, so that ordinary triangulation methods of accurately locating the position of the ship cannot be used. In such cases the position of the ship is determined by a method known as acoustic range-finding, in which the distance of the ship from shore is measured by the velocity of sound.

When the surveying ship has made a depth measurement, or sounding, a bomb containing a pound or so of high explosive is dropped overboard and exploded twenty or more feet beneath the surface.

THE sound produced is picked up by a submerged microphone or hydrophone located on the ship, and the impulse transmitted through a three-stage audio amplifier to the pen-actuating magnet of a chronograph, making a mark on a paper recording the strip. The sound of the explosion also travels through the water in all directions, and is picked up by hydrophones anchored

a failure would not be conducive to the prestige of the British Government.

in approximately fifty feet of water at two or three known points on the shore. Insulated cable connects these hydrophones to a three-stage amplifier at each shore station. The amplified signal actuates a relay which sends a flash from a simple low-power radio transmitter. The radio signal is picked up by a tuned receiver on board ship and amplified, and this current also actuates the chronograph pen before mentioned.

The paper strip or tape has been moving at a uniform rate during the time between the bomb explosion and the reception of the radio flash, and consequently the space between the two pen marks is an index of the time elapsed.

Accurate measurements have determined that the velocity of sound through sea-water is approximately 4920 feet per second, varying somewhat with the water temperature. For example, if the elapsed time is 60 seconds the ship is consequently approximately 56 miles from the shore station.

Two or more stations are required so that there may be no error.

THE system possesses certain difficulties of operation in some localities. Experience has shown that the apparatus works better where the bottom falls rapidly away from the shore, and where the water is cold and of fairly even temperature. Shoals also seem to present difficulties in the transmission of sound through water. The exact influence of each of these factors has not been fully determined, but active investigation is being carried on.

On the Atlantic coast of the United States, where the continental shelf extends for a good many miles off shore, and also where the water is compara-

tively warm, considerable difficulty has been experienced in getting the apparatus to work satisfactorily over any great distance. On the other hand, on the west coast, where these conditions do not obtain, excellent results have been achieved over a distance of about two hundred miles.

THE system has such attractive possibilities for the location of positions at sea rapidly and economically that development work will be rapidly carried on in an effort to perfect its use under all conditions.

Appreciation of Service

Practical appreciation of the service rendered by the Manawatu Radio Club's broadcasting station, 2ZF, at Palmerston North, in advising farmers in threatened localities of the danger on the occasion of the last flood, in the Manawatu district, has not been lacking.

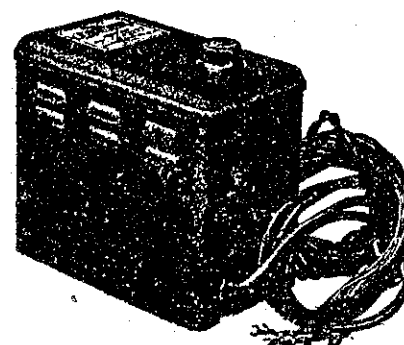
At the annual meeting of the club recently, Mr. H. Hamilton intimated that both the Manawatu and Sluggish River drainage boards had passed resolutions to forward letters of thanks to the club, and had jointly sent a donation of £5.

Another indication of appreciation was given by Mr. Arthur Akers, who considered that, if he had not been warned in the manner described, he would have been affected by the flood waters. He was able to move stock valued at £7000 or £8000 out of the danger zone, and had forwarded the club a cheque for £5 in appreciation of the timely warning given.



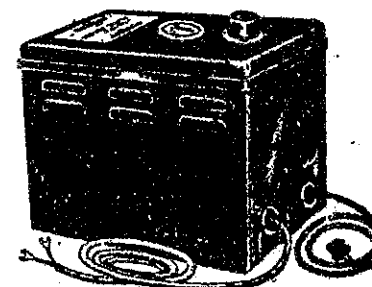
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MELBOURNE

ANSWERS IN BRIEF.

"A.F.B." (Wellington) asks the kind of valves to use with a resistance coupled amplifier. This question would either involve a long table of selections from all the makes of valves on the market, or recommendation of a particular make which we could not in fairness do. Consult a reliable dealer.

Effective Height of Aerial.

"I AM keenly interested in the notes appearing in the 'Radio Record,' and I shall be much obliged if you will be so kind as to answer the following questions:—

"1. In the issue of December 14, and in the article 'Choice of Aerial,' it is stated 'the effective height of an aerial is its distance from the nearest earthed object.' My aerial does not pass over the house, but it runs alongside and not far distant from the house, although above it. According to the above, the effective height of my aerial is its distance from the house. Is this so?"

It must be remembered that though the aerial passes near the house it may not be in very close proximity to an earthed object. It may run near the wall, in which case, poor results should only be expected during wet weather. If on the other hand it passes very close to the roof, which is

connected to the earth by a downpipe, then the effective height is the distance from the roof. That is not to say an aerial as high above the ground as the aerial is from the roof would be equally effective. There are more factors to be considered.

"2. Then again, the lead-in is near to the house. Does this affect the height of the aerial? Or, is this only so when the wire is not insulated?"

This only affects the height when not insulated. All leads in should be insulated.

"3. 'H.S.T.', Wellington, says his set works just as well without an earth. I have a factory five-valve set, and, after reading the above, I tried my set without the earth, and on returning I could bring in 2YA just as good as ever. Also, on disconnecting the aerial and connecting the earth wire to the aerial terminal, I can tune in 2YA A1. There are no breaks in the earth wire as far as I can see. My earth consists of two kerosene tins of sea-water sunk two or three feet in the ground and the lead is not more than 6 feet. Have I good earth?—2YA comes in at sufficient strength to work some sets without aerial or

Questions and Answers

earth, so that it is hardly a fair test. Try disconnecting these on a weaker station. The earth is quite good.

"4. Owing to alterations to my house I may have to shift my aerial. Will an aerial, L type, running west, 75 feet long, lead-in 18in., be effective? You will notice that one aerial mast will be attached to the verandah so that the aerial will again be near an earthed object, and the lead-in will run down close to the side of the house. Of course, I shall have insulated wire for the lead-in right from the connection with the aerial wire. An 18 foot mast is provided for on the veranda end, a 36 footer at the other"—this should be effective under the circumstances, but there are one or two points to watch. The actual aerial should not be commenced near the veranda mast. Allow, say, 12 feet, from the verandah. This would offset the proximity of the earthed roof. See that the lead-in is heavy stranded cable, and well insulated. Keep this clear of the walls by insulators.

"5. The lead-in will have to run along the veranda 18 feet to the lead-in tube. Will this be safe? I will put the lightning arrester on the aerial mast or post of the veranda."—The best place for the arrester is on the veranda post, if possible, in a sheltered spot. This would be quite safe. See Fire Underwriters' regulations in last week's issue, page 29.

"6. Which will be the better, to have the lead-in on the outside or on the inside of the veranda? I shall obtain some small insulators to attach the lead-in to, and so keep the wire off the wood."—The insulation would be better protected if the lead-in were placed in the inside of the verandah.

"7. Will there be any leakage on account of the lead-in being so close to the wood?"—Not if the precautions mentioned above are taken.

"8. I will also have to run the earth-wire across the veranda. Will insulated wire running along the floor be sufficient? To run the wire along the roof would make it too long."

Providing the wire is equally as heavy as the lead-in it should be very effective. There would be no point in running it round the roof and there is no need to use insulated wire except where it is in close proximity to the lead-in.

Ducon Aerial Plug.

"COULD you give me any information regarding the 'Ducon' aerial plug, for use with crystal sets."—A.F.B. (Wellington).

"Ducon" is the trade name for a product that is to be used to enable signals to be collected from the electric mains. In essence the plug consists of a suitable support into which there are two or more fixed condensers. When the plug is fitted into the light socket these condensers are in contact with the two wires of the mains. Terminals are attached to each of the sets of condensers, from which leads can be taken to the set. One of the contacts will connect with the positive which passes through the wall switch, while the negative is grounded at the switch-board. Obviously it will be necessary to plug into the positive lead

so that it will be necessary to try each of the two terminals to find the better.

The attachment is quite safe in application, the high voltage being stopped by the condensers owing to the fewer cycles per second (50 as compared with, say, 1,000,000, in the case of an ordinary broadcast station.)

This attachment is less suitable than a good outside aerial, and should be resorted to only where such an aerial is not available.

Low Filament Valves.

"VALVE" (Havelock North) writes:

I have a wireless set using 6-volt valves requiring a heavy filament current. I have been advised by one person to use low-filament 6-volt valves and thus save my A battery current. Another person tells me that my A battery current will be less, but the B current will be more, and also that they cannot be used unless the circuit is altered. Can you inform me—

IF a 6-volt low-filament consumption valve can be used in the same circuit as a higher amperage valve without further alterations to set?

Yes, providing the valve bases are the same.

AS compared with the higher amperage valves do the low consumption use more or less B battery current?

This is difficult to answer, as there seems to be a great diversity of opinion. There is no reason why they should, as the filaments of the low-consumption valves are constructed of thorium and tungsten, which accounts for the smaller amperage used. There is no relation between this and the plate consumption.

DO the low-filament valves give poorer tone quality than higher?

No.

The Baffle Board.

"IS three-ply venesta suitable material to make the baffle with, and would the same material be suitable to make the whole cabinet?" inquires "G.L." Otago.

No, the baffle board should be of heavier material—say one-inch timber. It is preferable, too, to make the cabinet of heavy material, though not necessarily as heavy as the baffle.

WOULD a baffle board 4ft. x 4ft. give better results than one much smaller?

Yes, the size should not be less than 2ft. 6in. x 1ft. 10in., if quality is desired.

IN the event of making a large baffle board, has the unit to be placed in centre of same?

It is advisable. Yes.

COULD the baffle and cabinet be made high and oblong without detriment to tone and volume?

Yes, providing it is not made too narrow—less than 1ft. 10in.

CAN the Mullard P.M. 22-power valve which is similar to the new Philips Penthode five-element valve be procured in New Zealand?

Yes. It is stocked by all reliable dealers.

Mean Time.

"WHAT is the meaning of 'G.M.T.'?"

"G.M.T." signifies "Greenwich mean time," or the time adopted as a standard by countries near the meridian 0deg.—that is, the British Isles. Places

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An Earthed Aerial Works.

AS I am very limited for room to erect a single wire aerial, I have been using a double wire each 50 feet with 4 feet spreaders, height 35 feet. I am now erecting new aerial of heavier gauge wire with 7 foot spreaders. After partly dismantling old aerial, not having time to finish, I gathered the two wires, from which spreader had been disconnected, drew them down tight and connected to pipe in ground, still leaving up one end with lead-in, and wires lying flat across iron roof. I still find reception as good as before in spite of aerial dismantled and one end grounded, distant stations coming in with great volume. Could you offer any solution as to why I should get these results with aerial as stated?

Also, kindly state whether, in erecting twin wire aerial, wires should be separate or could the one wire be passed through insulator on spreader and back to lead-in end, twisted and taken straight down to set, making one continuous wire.—C.G.T. (Pt. Chalmers).

Regarding the problem there are two points of view.

(1) That the roof was not grounded and that either of the earths were inefficient so that the aerial and the ground were actually not in good electrical connection. The wire may have been loosely twisted round and so a poor contact may result.

(2) Considering that the aerial was properly grounded it and the ground may be forming a huge loop, collecting signals in the same manner as does the ordinary inside loop.

Probably were the aerials to be re-erected, it would be found that the signals were stronger than when the aerial was down.

Wires for a twin wire aerial should be separated by six feet. The lead-in should be joined as near as possible to the set. This would allow a maximum of collecting area.

Condenser Effect of Lead-in.

IN view of the questions asked by our Marlborough correspondents, and answered in "Questions and Answers," the following letter and its reply, published in "Popular Wireless," will be of vital interest to those whose lead-in is suspected of being below maximum efficiency.

A correspondent to this paper wrote asking why his reception improved when he disconnected his lead-in, which ran round the wall, and temporarily replaced it by a wire coming straight in. The wire in the latter case was not so good.

THE reason that you are getting better results with the spaced-out wire (replies the technical editor) is that formerly a certain amount of the energy that was passing along the lead-

east or west from the "0" meridian are ahead or behind, according to their position. Four minutes are allowed every degree, so that New Zealand, on the degree 172½ E., is 11hr. 30min. ahead of English time.

"WHAT does 18.00 and 20.00 G.M.T. signify?"

In scientific calculations the confusing a.m. and p.m. are abolished and the hours numbered from 0 to 24, everything after 12 being p.m. Thus 18.00 G.M.T. is really 6 p.m. English time or 5.30 a.m. New Zealand time.

A Corner for Beginners

—By Observer—

in used to leak away to earth before it reached the set. Although you used insulated wire, the fact that it ran close to a wall set up a kind of condenser effect between the wire and the earth. A certain amount of the high-frequency energy passed across this condenser, and found its way via this short cut to earth, without helping to strengthen the input to the telephones.

By taking the lead away from the wall you prevented this short-cut effect taking place, and you have compelled all the current flowing in the aerial to pass properly down the lead-in through the set to earth.

It is because of such condenser effects between the wire itself and any neighbouring surfaces such as walls, gutters, pipes, etc., that it is inadvisable to run the lead-in near walls, etc. Never have a long lead-in if a short one will do. We certainly recommend you to keep it well spaced out from the wall or ceiling, if necessary using insulating arms or wooden supports to ensure it is sufficiently spaced.

Neutralising.

MANY correspondents have written in complaining that their sets have commenced a peculiar whining. This seems to indicate that they have become denaturalised. The following method of neutralising is recommended for use in sets employing one stage of H.F. and provided with a reaction control. Set the reaction control at minimum and likewise the neutralising condenser. Now, on setting the tuning condensers so that the two tuned circuits are in step with each other, it will probably be found that the set is oscillating.

To test for oscillation, touch one or other of the sets of plates of the tuning condensers (this may be either the fixed or moving, according to the particular set). You will probably find that the set will only oscillate under the above conditions when the two circuits are in tune with each other, and this can be used as an indication. (It is convenient to perform the operation at some point near the middle of the tuning range.)

Now, increase the capacity of the neutralising condenser. (In the case of such condensers as the Gambrell "Neutrovernia" this means screwing downwards.) Test at intervals for oscillation as this is done, and you will presently find that the set has ceased to oscillate and will not recommence even when the tuning dials are slightly readjusted.

Now increase the reaction a little, until the set once more oscillates, and again increase the neutralising condenser setting until oscillation ceases. Slightly readjust the tuning condensers again to make sure that the set is completely stable once more.

Proceed in this way until it is found that the correct adjustment of the neutrodyne condenser has been over-shot. Once this point has been passed it will be observed that further increases of the neutrodyne condenser setting no longer stop oscillation, but cause it to become stronger.

The object is to find such an adjustment of the neutralising condenser as will permit the greatest setting of the reaction condenser to be used without producing oscillation.

It will then be observed that when the two tuned circuits are in step and the set is brought to the verge of oscillation a slight movement in either direction of the neutrodyne condenser will cause the receiver to break into oscillation.

Note.—It is to be understood that in the preceding notes, where a reaction condenser is spoken of, any form of reaction control may be understood.

A Useful Ground.

A.B., writing from Dannevirke, suggests a good ground. He has read our article on "Earths," in the special issue, and contributes the following as a suggestion.

Three damaged motor radiators connected by heavy wire, and preferably to an underlying copper plate. The top of the radiators are left projecting above the surface of the ground and are kept filled with water. An independent wire runs to each of the earths, including the copper plate. All meet at the binding post.

"As the honeycomb arrangement makes quite a good contact with ground, which will ooze into cores, and a number of radiators are made of brass or copper, quite a good connection with ground should result. Bluestone or rock salt is also supposed to improve ground connections though I have not tried same."

Soldering Hints.

TO attach the lead-in, suggests A.B., first tin the pipe where the connection is to be made. Wrap the lead round this several times then solder all along the coil so made.

To join two pieces of wire tin each for a distance of four inches from the end leaving ½ inch at the extreme end free. Bind with fairly fine wire, and solder again. Bend the two free ends back along the coil.

"I consider the earth and wire joining connections worthy of publication, as I have seen figure 8 joins with a dab of solder in the centre called a good 'join,' also a wire running on side of pipe for ½ inch and soldered for earth connection."

Heavy on Battery.

A.B. has advanced further suggestions to deal with a set heavy on A battery.

"I think F.M.'s (King Country) article re 'Heavy on A Battery' worthy of note. Why not advise him to fully charge his A battery and let it remain unused and note how quickly it runs down? If it survives this test (that is, it does not run down), the trouble must lie elsewhere. The battery should be freed of wires in case of a short circuit in same. He may be using too much resistance in the filament circuit. I once had trouble with my A battery running down, and traced the fault to a bad filament current switch which was connected to an earthed metal shield surrounding the set. I found that on removing the earth wire the discharge ceased, although I have not as yet solved why. However, a new switch put matters right.

Set Loses Volume.

"ANOTHER experience: My set commenced losing volume rapidly, and within a month was merely a whisper whereas previously it was audible (using five valves) 150 yards away in day time. But of course my aerial is 160ft. long and 50ft. high. On examining insulators holding lead-in away from wall, each one was covered with spider webs; on removing these the volume had jumped up to quite reasonable strength, but was still lacking.

"I then suspected the earth, as valves and all batteries were O.K. On shifting the earth pipe (which was then used and only 3ft. long) to a spot a couple of feet away, volume was restored to normal. As I always watered the earth before turning in, it seems to me that I must have washed all the fine soil away, leaving only lumps in its stead.

Defective Resistance.

"ANOTHER experience: I once was carrying out an experiment, using two sets (two and five valves) on the one aerial, using one set of batteries. On switching on a burning smell greeted me, and clouds of smoke rose out of the larger set. I immediately switched off, and on examination discovered that the reaction rheostat had been scorching, but apparently no damage was done. I then tried the five-valve singly, and it did not come up to "scratch." Some hunting ensued with no success.

"Two months later a friend was conversing on resistances, whereupon I showed him my rheostat, and then removed the grid-leak for his inspection, and was explaining its works, and said: "See this strip of lead," and on going to point it out found it was missing. A round blob of lead in one end of the tube denoted it once was in existence. A spare grid-leak was placed in the set, and all was as two months previously."

THESE suggestions and experiences are very helpful to others, and we thank A.B. for them. At the same time, we would like to hear more from others. Everyone must have had some experience, or have some idea that will be helpful to others—send it in and make the "Beginner Corner" an "Exchange Corner." We are all beginners, and real progress can only be made by mutual co-operation.

THERE is a special type (not named) of valve for every valve socket in your receiver, so be sure you get the right one if you wish to get good results.

THE WOMAN'S POINT OF VIEW

By "VERITY"

Colourful Gifts

THERE is always a specially warm feeling of gratitude within us for a present that we know has been fashioned at the hands of the giver. It gives one a delightfully happy feeling to know that precious hours have been spent on some trifle. There is an intimate touch about such a present that an expensive gift, bought an hour before the presentation never achieves.

Most women are gifted with deft fingers and a highly developed colour sense. They can, at a very moderate cost, make in their spare time delightfully original Christmas gifts.

Briefly, the process consists of sketching a design on some suitable material, white crepe de chine for instance, covering the parts not to be coloured with a certain pleasantly scented wax and dyeing the rest. Both the wax and the proper batik dyes can be obtained for a few pence.

This craft has long been practised in Java, where it originated; centuries of practice have evolved many beautiful traditional designs introducing a great number of colours in a beautifully soft effect.

There is no limit to the number of colours you may use provided you remember to wax the parts not to be affected by the colour you are actually using, unless you intend the colours to run into each other to give a blurred effect to the edges.

After the dyeing process is completed the wax is easily removed by the ap-

plication of a fairly hot iron to the material, which must be placed between sheets of clean blotting paper; these absorb the wax and must be renewed until all the wax has disappeared. Any lingering traces can then be removed with a rag dipped in petrol.

There are two methods of applying the dye. One is by brushing the colour on the material stretched on a frame, using a soft brush and diluting the colours with water as may be necessary to produce the tint required. After the dyeing is completed, rinse the material in cold water and allow to dry. By the other, the dipping process, the dyes are prepared in bowls and the material dipped in each for a few minutes, then rinsed thoroughly to get rid of any superfluous dye.

If the dipping process is used great care must be taken to wax the parts of the material not to be coloured, whether those parts have already been coloured or not. Before applying fresh wax the material must be perfectly dry, otherwise it will not protect the surface.

A Useful Trio

THREE umbrellas with a single handle which can be fitted to each one as desired, the whole packed in a neat leather case, is one of the newest Christmas gifts available to the London shopper. The umbrellas are covered in black, blue, and brown silk respectively, and each one has a malacca ferrule matching the crooked handle of the same wood. This invention is a boon to the woman who likes plenty of variety in her dress colour schemes, for without much expense it enables her to have an umbrella to harmonise with every ensemble.

Apple Dishes

A DELICIOUS apple sweet can be made from 1lb. apples, 1 lemon, 2 eggs, 3oz. butter, 2oz. sugar, and 1-lb. puff pastry. Roll out pastry, and line a pie dish with it. Peel and core the apples, and gently stew them till soft with the lemon rind, sugar, and a little water.

Rub the pulp through a sieve, and place in a saucepan with the butter, lemon juice, and yolks of eggs, and allow to simmer. Fill the dish with the mixture and cook in a fairly hot oven till set. Whip the whites of eggs, spread them over the top of the dish, and sprinkle with castor sugar. Return dish to the oven to brown, and decorate with glace cherries.

Apple Batter.

Apple batter is a nourishing and satisfying pudding. Place 4 oz flour and a pinch of salt in a basin. Beat up three eggs, and add to the flour with a gill of milk. When well beaten, stir in a pint of milk gradually. Peel, core, and cup 1lb. apples into slices.

Farthest West

"I will go," I said, "to the farthest West
To find a haven of peace and rest."
Therefore I fled to the edge of the map
And what should I strike, by a strange
mishap,

But the closing day of the annual fair,
And O! the crowds and the tumult there,
Honking motors that packed the street,
Trumpets that brayed and drums that
beat,

And I cried, "What use is it here to
stay?"

But that was before I had seen the Bay.

And it's O! the blue of the Western sky
And the blue of the Western sea,
The subtle charm of that ancient land
Where the long waves break on the white
shell-sand

Gem clear as beryls be,
And the white gulls flash in the sunlit
air!

Never was English scene more fair.

Magical days too quickly fled!
Fate hauled tight on the horrid thread
That drew me back to the town again
And the toil of which I was far from
fain.

And the clouds of the West hung dark
and low,

And wept, as I thought, to see me go.
But though London Town seems grey
and chill

The charm of the West is with me still.

Here is the City's pulsing heart
There's a voice that calls to me,
And even now as I close my eyes
I can see the shores where the great
cliffs rise

High o'er the sapphire sea
And far away where sea meets sky
To every land great ships go by.

TOUCHSTONE.



Mirrors and Reflections

THE most modern manner of using mirrors for decorative purposes is to dispense entirely with the frame and attach them to the wall with white metal clips.

This method can be extremely charming in the right environment, embodying as it does the complete simplicity which marks the best in modern decoration.

In the case of a small room, they have the value of giving the effect of spaciousness; a dark room is considerably lightened; and the mirror can be used to repeat the outline and proportion of the window, adding to the harmony of the room.

Indirect lighting is becoming more and more popular, and here again oblong mirrors are sometimes used as shields for the electric light bulbs, the light being reflected from walls or ceiling.

Many modern rooms are dominated by the plain, unadorned mirror.

Click! went the 'Kodak'

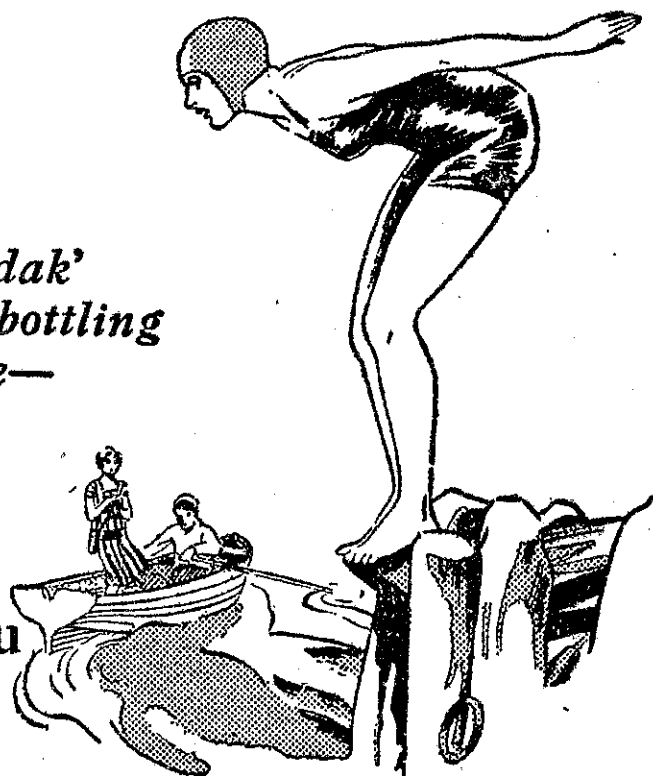
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Annotations of Annabel

Books.

MR. HODGE AND MR. HAZARD.

(Elinor Wylie.)

MISS WYLIE'S latest novel is a delightful work, subtle and distinguished in phraseology, and acutely observant and analytic in character.

Quite episodic, it is merely a narration of some months in the life of a middle-aged poet, who, about the year 1840, returned from abroad to live for a short space in his native land, finding solace for racked body and frayed nerves amid blossoming trees and low-lying valleys of the English countryside.

Here he meets a Watteau-like beauty, who is the lucky possessor of eyes that are sapphire and a heart that is crystal kind. In spiritual adoration of her the tempest-torn heart of the poet finds temporary healing; and also he delights in the lovely laughing nymphs who are Lady Clara's daughters, and answer to the musical and Miltonic names of Al-legra and Penserosa.

When reading this charming fantasy one's attention is enchained by perfection of word painting, and a rare and acute consciousness of nuances of the spiritual life, those shallows and heights and depths that go to make up the manifestations of what is loosely and generally known as the artistic temperament.

The story is subtle and slight, merely an exquisite chronicling of picnic and play hours of a rebel and a dreamer with the lovely ladies of his heart; whom, true to his cult, he deifies into gracious goddesses of misty romance.—R.U.R.

You Can't Fry Over a Valve



But a Radio Set can be a great help to the cook for all that. The other night's Broadcast suggested that housewives should send for the new "Anchor" Recipe Folder. Simply write "Anchor," Box 844, Auckland.

ANCHOR SKIM MILK POWDER

DEAREST:

The year draws to a close amid brave summer days and the clear and cool atmosphere of our lovely land. Annual scrimmage in seething shops is over, last calendar posted, stockings stuffed, and Santa Claus has waved wistful farewell.

ON the heels of the storm comes calm, we welcome port after stormy seas, and still small voice following tempest with the whisper that we have leisure at last. So, twisting tired selves, lissom or lengthy or inclining to embonpoint, in deck chair or hammock, we abjure madding crowd and silly season, and ponder problems of life and love and whether we shall tackle that form of torture we call a permanent wave.

DISTINGUISHED visitors flock for fishing, crowding in on our lakes and rivers. Lucky people are en route for flushed sunlit loveliness of Mount Cook, the rose-flooded memory of which brings sudden sharp pang of longing for high hills that lift themselves beyond these voices and whisper noble secrets to the stars.

MY only incursion into realms of youth in the form of end-of-the-year entertainment was at that given by the merry maidens of Chilton St. James, at Lower Hutt. Accompanied by the fluent and accomplished Juliet, we agreed this was a clever, witty and charming show.

THE play was the thing upon which was bent combined energy of clever girls, big and little, who utilised fresh voices, delightful articulation, and considerable talent to ex-

cellent purpose. "The Quest of the Cassowary" is a fantastic medley of delicious nonsense, charming enough to ensure for it a long life, and 'twill be no matter of surprise if in future it is sought for its quaintness, originality, and scope for talent, budding or full-blown.

JULIET waxed enthusiastic anent the dark-eyed Gerda, that sweet village mayde, who glimmered daintily in and out of the limelight. Also very capably played was the calculating young plutocrat, her rival for place and power as queen of the revels; while the Poisoner was a thrilling and majestic figure of fun. The splendid voice of this young treader of the boards, was heard to advantage as majestically she declaimed value of her diabolic stock-in-trade. Many and varied were the performers in this rosebud garden of girls, and all of them, from Cassim to Cupid, were good; but, imposing height and bearing garbed in flowing black draperies, with cabalistic embroideries, perhaps the exponent of the execrable Guleesh was most memorable.

THE lilting music was delightful, and lyric and libretto witty indeed. As for that feathered fowl of destiny, the Cassowary himself, he proved thrilling as the Ancient Mariner's albatross, appearing at inauspicious moments with enviable aplomb. I feel sure that if Mr. A. A. Milne could witness the gyrations of that brave bird, he would make a poem about it for Christopher Robin.

WHICH reminds me of the accomplished Mr. John Drinkwater's latest essay in verse. Dramatist and

poet, he now tries his hand at childish doggerel, and in "All About Me" it would seem that, in the vernacular, he has once more "got across." Of an astonishing versatility, Mr. Drinkwater writes with equal ease of Oliver Cromwell's austerity, analyses melodious beauty of the Victorian school of poetry, creates an amusing comedy like "Bird in Hand," and now proves he can steal away the heart of a child. How amusing and idiotic he is—

Mr. Smith had quite a lot of daughters, Who went to Bath each year to take the waters.

Mr. Brown had quite a lot of sons, Who went to Bath to take the puns.

ALTHOUGH no visionary, firmly I hold conviction that dreams come true, even in this plain world. That wise moralist, Ralph Waldo Emerson, was of the same opinion, and wrote dignified caution against crying for the wrong moon, so to speak, and hitching wagon to undesirable star. "What you wish for you shall find," said he, or something like it. So when

The New Year blithe and bold, my friend,

Comes up to take his own,

clutch the sometimes forlorn hope that recurrent morning of the months will bring along our heart's desire. And it may be that thus we shall go on until, the last page turned, we find

In heaven, perchance, new chances, One more chance!

Your

ANNABEL LEE.

Making Good Coffee

Some Timely Hints

ALTHOUGH coffee is one of the most popular drinks in this country, it is surprising how very few people know how to make a really good cup of coffee. A common failing is to make it too weak. At least one tablespoon-

ful to every half-pint of water is a good proportion.

Only the best brands should be used, and when purchasing always choose hard, pale-roasted beans. When beans are dark they have been over-roasted, which is detrimental to the flavour. The best results are obtained from freshly-ground berries, as the strong aroma quickly disappears. A small coffee mill is a good investment, and the beans should be freshly ground at home as wanted. If a grinding machine is not obtainable, choose a shop where coffee is roasted each day and ground to order. Buy only a small quantity at a time, and store it in an airtight tin.

The best coffee is that which has no chicory added to it. Although some people prefer the slightly bitter flavour of the chicory, the best results are

obtained from pure coffee. A simple test of pure coffee is to drop a little in a glass of water. Coffee will always float on the surface, while chicory will sink quickly and colour the water.

An easy method of making good coffee is to measure the required amount of coffee and place in a saucepan. Pour boiling water over it, and allow to simmer for three or four minutes, stirring all the time to mix the coffee and water. Add a pinch of salt and a little cold water to settle the grounds. Allow to stand a few minutes, strain off into a coffee-pot, and serve.

Many of the coffee-pots on the market are fitted with a percolator, when the coffee is placed in a container and the water boils over it. The pot should be kept over a medium heat, and the process continued until the coffee is the required strength.

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FOR COUGHS AND COLDS

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Features of Next Week's Programmes

Notes from 1YA

THE programme arranged by 1YA for December 31 will be one of the grandest studio concerts ever presented in the Queen City. From 8 o'clock till after 12 there will not be a break in the entertainment. Every item will be of the popular type, as a glance at the programme will show. Among the performers will be the Olympians, the Tui Hawaiian Orchestra, the Hebrew Two and the St. Andrew's Quartet. Individual performers will be Miss D. Youd, Miss Adelaide Taylor, Miss Phyllis Gribbin, Miss Martha Williamson, Mr. Lambert Harvey, Mr. Geoffrey Colledge, Mr. Arthur Colledge, Mr. F. W. Barker and Mr. Zante Woods, the last two being providers of humour. These artists, with just a few bright gramophone items introduced, will make a fine double programme that is certain to keep the attention of listeners right through. Not the least interesting feature of the evening will be the choruses.

Just before midnight the studio microphone will adjourn to Queen Street, where from a vantage point the scene there will be described and the street noises will be broadcast. At 12.1 a.m. the station will send out greetings to all listeners and with the singing of "God Save the King," 1YA will close down on a very successful radio broadcasting year.

ON Tuesday evening another programme to suit the holiday spirit will be presented. Mr. Fred Barker will be singing, his numbers being "Ruben Ranzo," "My Blue Heaven" and "Ramona." The Snappy Three will present some of their usual popular items; Ingall's Hawaiians will play Hawaiian airs and the Asquiths will present one of their half-hour studio entertainments. There will also be items by the studio orchestra and there will be a relay of music from the Majestic Theatre, where the orchestra is under the baton of Mr. Whiteford Waugh.

THE Octette Quartet will be providing the vocal items on Wednesday evening. The opening number will be "The Hunting Chorus" and choruses will be a feature of the evening. Among them will be "The Lost Chord," "Blue Danube Waltz," "Waters of Minnetonka," "Waltz Song" (from "Faust"), "Song of Old England" and "Land of Hope and Glory." There will be several solo items. The instrumental numbers will be provided by gramophone recordings and Miss Maisie Carte-Lloyd has been engaged for elocutionary items.

ON Thursday evening excerpts from "The Lilac Domino" will be produced, the vocalists will be Mrs. Bond, Miss Violet Harrison, Mr. Len Keven and Mr. Leo O'Malley. The studio presentation will be under the direction of Madame Irene Ainsley. In the miscellaneous

cellaneous portion of the programme Miss Marjorie Fair will be singing. Mr. Leo O'Malley will contribute "On the Road to Mandalay." Miss Violet Harrison will sing "Grey Eyes," Mr. A. E. Davies "Thora," and Mr. Len Keven "Ships."

Mr. A. B. Chappell's talk on Thursday evening will be "The Maori—His Art."

"Campbell of Kilmohr," a one-act drama which caused a great impression when it was previously presented, will be again broadcast on Friday evening by Mr. J. F. Montague and his Auckland Comedy Players. Another playette



Miss Eileen Carter, one of the talented Carter Sisters who are making a reappearance at the microphone this week.
—Photo, Standish Preece.

of a different type will also be presented. It will be a comedy sketch—"Lights Out."

The vocalists for Friday evening will be Miss Cecilia Duncan, Miss Phyllis Gribbin, Miss Adelaide Taylor, Mr. S. Raymond, and Mr. Arthur Colledge. Concerted numbers will be presented by St. Andrew's quartet.

A VAUDEVILLE type of entertainment is billed for Saturday evening. Miss Beryl Poulton will be heard as a jazz pianiste. Miss Bessie Le King is a contralto who will sing the latest popular songs. The Snappy Three and the Bohemian Duo will present novelty numbers. There will also be items by the Auckland Trio. After the concert session dance music will continue till 11 p.m.

2YA Items

NEW Year's Eve will be celebrated by some special music and other items at 2YA. The orchestra will play

a nautical overture based on familiar airs, "Plymouth Hoe," a musical comedy selection, "Bing Boys," and three dances from "Tom Jones," by Sir Edward German. In addition, there is a flute solo, "Serenade" (by Till), and Old Folks at Home," a cornet solo. Mrs. B. Kennedy, a very fine contralto, who specialises in Scottish songs, will sing "Auld Lang Syne" and "Castles in the Air." Mr. Doug. Stark, the clever Scottish comedian, will be heard in "Ohio" and "The Portobello Lass." Soprano solos will be sung by Miss Jeanette Briggs, and Mr. John Prouse will give a bracket of four numbers, including "Off to Philadelphia" and "Mary Morrison." Elocutionary numbers, "Ring Out, Wild Bells" (Tennyson), "Peter," and "Heaps of Lickin's," will be given by Mrs. Theo Hills.

At midnight a relay of the Watch Night service from St. Andrew's Presbyterian Church by the combined churches will be heard.

ON the evening of New Year's Day a bright and happy programme will be heard. Dalton's Dance Orchestra of ten instruments has been specially engaged, with intervals for programme items. The orchestra will give plenty of the latest dance novelties until 11 p.m. A group of entertainers, including Mr. and Mrs. Albert Russell, Miss Marjorie Buckeridge (soubrette, who toured Australia with the Humphrey Bishop company), and Mrs. K. A. Palmer (a leading soprano of Wellington), will give several numbers of a light nature. Mr. Arthur Coe (tenor) and Miss Ellen Samson (a dainty mezzo-contralto) will sing popular ballads. Mr. Arthur Chalk, comedian, will give "House Hunting" and "O Dear, What Can the Matter Be."

At approximately 10.1 p.m. listeners are asked to join in singing "Love's Old Sweet Song," which will be led by the artists and staff.

THE Artillery Band, under the baton of Captain T. Herd, will play some very fine items on Thursday, including "The Golden Star," "Minola," "A Musical Bouquet," and "Donan Wellen." Bandsman W. Sneddon, one of the finest cornetists in the Dominion, will play "A Dream," composed by the conductor, and a horn trio, "Gleaming" (by Evans) should prove an interesting item. A medley number, introducing many hunting songs, will also be played under the title of "A Hunting Trip."

The Lyric Quartet will provide vocal items and the elocutioniste is Miss Rose Carte.

ON Friday evening, in addition to some very fine orchestral items, four outstanding vocalists will be heard: Miss Eileen Kimbell (soprano) will sing "The Pipes of Pan" (from "The Arcadians"), "O Mio Bambino

Caro" (by Puccini), and "Madrigal" (by Chaminade); Mrs. T. Treacey (contralto) will sing "Vo ci Donne" and "Ave Maria," an adaption of the famous Intermezzo from "Cavalleria Rusticana," by Mascagni; Mr. Oscar Dyer (tenor) has had several competition successes to his credit in Cornwall and Wellington, and his two engagements with the Orpheus Musical Society in "The Crusaders" and "The Bohemian Girl" have added to his fine reputation as a vocalist. He will sing "Passing By," "Sincerity," "Eleanore," and, by request, "When Other Lips" (from "The Bohemian Girl"). The baritone is Mr. S. E. Rodger, who has chosen "A Bachelor Gay" (from "Maid of the Mountains") and "Sunshine and Love" (from "The Gaiety Girl"). Mr. Barton Ginger will give two elocutionary items, "Mr. Grindle and Cleanliness" and "Como."

ON Saturday the Melodie Four will be heard in "The Old Brigade," "Laughing," and "The Soldiers' Chorus" (from "Faust"), while solo items will be given by the members of this popular organisation. Mr. W. Hurcomb specialises in novelty imitations of birds, animals, and musical instruments, and he is appearing twice on this programme.

THE evening service from the Trinity Methodist Church, Wellington South, will be relayed on Sunday evening, and will be followed by a studio concert, in which will be heard Mrs. Phyllis Ramsey, an outstanding contralto, who has appeared for the Royal Wellington Choral Union in "The Messiah," and also Mr. James Osborne, a popular tenor singer.



Miss Joan Carter.
—Photo, Standish Preece.

3YA Features

THERE will be much that is Scottish about the concert which is to be broadcast on Monday evening. Prac-

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tically all the vocal items are from the land of the heather. Mr. Bernard Rennell, baritone, will be welcomed back to the microphone. His numbers will be "Scotland's My Ain," "Bonny George Campbell," and "Annie Laurie." Scottish songs at the piano will be contributed by Mr. Jock Lockhart, these songs being four very popular Lauder numbers. With Sir Harry himself in New Zealand at present, it is quite probable that he may be listening in. If so, he will hear a rendition of some of his compositions, of which he will not be ashamed. He will also hear some original patter. Scottish recitations will be given by Mr. Campbell Brown, "Bairnies Cuddle Doon," "A Real Scotch Night." Further Scottish items, and this time, two of them will be real Gaelic, will be sung by Mrs. A. Whitehead. The instrumentalists for the evening will be the Woolston Band, whose programme will be of the usual diversity and excellent quality.

From the conclusion of the above programme at ten o'clock till 11.45 p.m., there will be a relay of dance music from the Winter Garden, where the music will be supplied by the Mailey-Marsden Band. At 11.45, listeners will "tune in" to the Cathedral Square, Christchurch, to hear the noises and clamour incidental to the passing of the old year, and the advent of the new. There will be a ringing of carols on the Cathedral bells.

The third instalment of Wagner's famous opera, "The Valkyrie," will open the programme on Wednesday evening.

THE Carter Sisters, a trio of talented instrumentalists, will make a reappearance in radio work this week. On Wednesday evening they will play popular selections from well-known operas. Violin solos to be played by Miss Joan Carter will be Schubert's "Moment Musical" and Rimsky-Korsakoff's "Song of India."

THE vocalists for Wednesday evening will be Miss Margaret Lorimer, Miss Nellie Lowe, Mr. T. G. Rogers and Mr. A. G. Thompson. The concerted numbers will be "Come to the Fair" and "The Old Folks at Home." Humorous numbers will be given by Mr. Sydney Comfort.

AN excellent miscellaneous concert, mainly of well-known and popular classical numbers will be presented on Thursday evening, the singers being the Melodious Four. The programme is a very engaging one. Mr. T. D. Williams's solos for the evening will be Schubert's "The Wanderer" and Handel's "I am a Roamer." The Carter Sisters will appear again this evening in a series of instrumental numbers and 'cello solos will be played by Miss Charlotte Carter. Elocutionary items will be given by Mr. Hiram Dunford. He will recite "The Bells," the famous poem of Edgar Allan Poe, and "The Casket Scene" from "The Merchant of Venice."

THE Valencia Quartet, which has leaped quickly into favour, will present further concerted work on Friday evening when they will sing excerpts from "Florodori." Solo and duet items of a miscellaneous nature will also be sung by the members of the quartet, Miss Renetta Rings, Miss Anita Graham, Mr. W. Bradshaw, and Mr. F. A. Millar. A solo by Mr. Millar

will be "A Hundred Fathoms Deep." The Carter Sisters will present popular instrumental numbers and the humour of the evening will be supplied by Mr. Geo. Titchener. His numbers will be "The Modest Curate" and "Lawyers' Language."

On Saturday evening 3YA will rebroadcast the complete 2YA programme.

Miss Kathleen Johns and Mr. Cyril Rishworth will be contributing an excellent programme to the after-church concert on Sunday evening.

4YA Notes

THE divine service from the Methodist Central Mission will be relayed



Miss Charlotte Carter.
—Photo, Standish Preece.

on Sunday evening. This will be followed by a studio concert.

Monday (usually the silent day at 4YA), being New Year's Eve, a special programme of light and popular music will be presented, commencing at 8 p.m. and continuing until after midnight, so that the New Year may be suitably welcomed in. Among the artists contributing will be some performers from northern stations who are visiting Dunedin.

ON New Year's Day, the usual afternoon concert will be broadcast from 3 p.m., and in the evening a merry and bright programme will be heard. Miss Betty Roberts (mezzo-soprano), Miss Mona McVellie (light soprano), Mr. J. B. McConnell (light baritone), and Mr. Jack Stewart in popular songs at the piano, will each contribute happy song hits, and Miss Eva Judd will play novelty violin solos. Miss Roberta Williams will recite some bright elocutionary numbers.

Pastor W. D. More will entertain on Tuesday evening with a humorous address dealing with "Some Humours of Old Time New Year's Days."

OWING to the many requests received, the 4YA Harmonists will repeat their excellent presentation of the song cycle "The Daisy Chain." This will be given on Wednesday evening. The 4YA Broadcasting Trio, will supply an instrumental accompaniment.

Supporting items of interest will be provided by Mr. P. J. Palmer ('cellist), Miss Aileen Young (pianiste), and Miss Madge Yates.

Miss Dorothy Sligo (mezzo-soprano), Miss Irene Horniblow, L.R.A.M. (contralto), Mr. R. B. MacDonald (baritone), and Miss Aileen Young (pianiste) are among the performers on Friday's high-class programme.

An excellent vaudeville programme has been arranged for Saturday evening, when some of the best of Dunedin's light talent will be heard.

Children's Sessions

AT 1YA.

TUESDAY, JANUARY 1.—Happy New Year, Radio Family. Uncle Pat will be at the Studio to send greetings of Radioland, and Cinderella will have something to say, too. Lots of fun on the first night of the New Year.

WEDNESDAY.—Hobo on deck, and, of course, Percy with him. Quaint stories and jokes to-night.

THURSDAY.—Another new Uncle in charge—Uncle Tim with his many funny stories and jokes. Birthday greetings, and Radio postman going his rounds.

FRIDAY.—To-night Nod and Aunt Jean will entertain the nephews and nieces with stories, songs, and jokes, from their never-ending store. So gather round and put your ear-phones on and listen hard.

SATURDAY.—Here is Cinderella once again, with puzzles, catches and stories. The Gramophone Man will also be present with some of his splendid records.

SUNDAY.—Uncle Leo will conduct the Children's Song Service, assisted by the choir from the Baptist Tabernacle Sunday School.

AT 3YA.

MONDAY.—A New Year's Eve with Scatterjoy and her jolly little helpers. Cousin Gwen is bringing her zither, and Cousin Mar-

ion, our Scots cousin, will delight you with some recitations.

WEDNESDAY.—Chuckie telling you stories about "Hansel and Gretchel" and "Jack and the Giant Killer," and singing you stories about "Christopher Robin."

THURSDAY.—Uncle Hal with a New Year's bag full of good things: good songs, good stories, and yes!—good resolutions! So just listen-in, and get some hints.

FRIDAY.—Brother Bill on deck to-night, and some little pupils of Miss Taylor's helping to unfurl the sails for a happy voyage of story and music.

SATURDAY.—Chuckie and Aunt Pat providing a happy Coon night—all about the little American Coon, his songs, and his catching, lilted music.

SUNDAY.—Children's Song Service conducted by Uncle David, assisted by the members of the Salvation Army Song Brigade.

Splendid Response to Appeal

AN appeal was made to the youngsters connected with the 2BL Radio Birthday Club a few weeks ago, as to whether they had any toys and books at home which they could do without, as these would be appreciated by the children at the Children's Hospital, Camperdown. The appeal was a great success. Not only was there a good response in small sums of money where the youngsters had no spare books or toys, but when the parcels were made up, altogether there were seven large clothes baskets full that had to be taken to the Hospital by car. This self-denial effort on the part of the 2BL Birthday Club brought great joy to the hearts of many youngsters in the Hospital.

THOSE who don't pay the Government taxes in Germany are called "Schwarzhoerers" (black listeners). In the first quarter of this year 551 "pirates" were caught and fined in Germany.

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Mr. K. B. Warner, Editor Q-S-T.

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Full Programmes for Next

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Sunday, December 30

1YA, AUCKLAND (333 METRES)—SUNDAY, DECEMBER 30, 1928.

- 6 p.m.: Children's session, conducted by Uncle Leo.
 6.55: Relay of Divine service from St. Andrew's Presbyterian Church. Preacher, Rev. George Budd; organist, Dr. Neill McDougall.
 8.30: Soprano solo—Miss Ida Holmes, "Ave Maria" (Gounod).
 8.34: Organ—Four Indian Love Lyrics. (a) "Temple Bells"; (b) "Less Than the Dust"; (c) "Kashmiri Song"; (d) "Till I Wake" (Woodforde-Finden). Col. record 02696.
 8.42: Contralto solo—Mrs. A. Wallis, "And God Shall Wipe Away All Tears" (Sullivan).
 8.46: Baritone solo—Mr. Walter Brough, "It is Enough" (Mendelssohn).
 8.52: Instrumental trio—"Trio No. 1 in B Flat—Allegro Moderato." Col. record 04138.
 9.0: Soprano solo—Miss Ida Holmes, "Come Unto Him" (Handel).
 9.4: Orchestral—"Rakoczy's March," from "The Damnation of Faust." Col. 04155.
 9.8: Contralto solo—Mrs. A. Wallis, "The Lord is My Light" (Allitsen).
 9.12: Band—"March Loraine." Col. record 02681.
 9.16: Baritone solos—Mr. Walter Brough, (a) "Lord God of Abraham," from "Elijah" (Mendelssohn); (b) "The Diver" (Corelli).
 9.22: Violin—"Humoresque." Col. record 09506.
 9.26: Orchestral, "Dance of the Sylphes." Col. record 04155.
 9.30: God Save the King.

2YA, WELLINGTON (420 METRES)—SUNDAY, DECEMBER 30, 1928.

- 5 p.m. to 4.30 p.m.: Afternoon concert.
 6.0: Children's song service, conducted by Uncle George, assisted by the Island Bay Baptist Sunday School Choir.
 6.15: Relay of evening service of St. Andrew's Presbyterian Church. Preacher, Rev. R. J. Howie, B.A.; organist and choirmaster, Mr. Frank Thomas.
 6.30: Studio concert.
 Orchestral—Berlin Philharmonic Orchestra, "Carnival Romain" (Berlioz), H.M.V. record D1365.
 Tenor solo—Mr. Chas. Williams, "Do We Believe" (St. Quentin).
 Choral—Glasgow Orpheus Choir, (a) "Dimlit Woods" (Brahms); (b) "Great God of Love" (Pearsall). H.M.V. record E482.
 Duet—Miss Florence Stevens and Mr. Chas. Williams, "Love Divine" (Stainer).

- Orchestral—Victor Symphony Orchestra, "Dance of the Hours" (Ponchielli), Zonophone EF12.
 Soprano solo—Miss Florence Stevens, "Fear Not Ye, O Israel" (Buck).
 Duet—Fernand Anseau and Marcel Journet, "I Am Escamillo," from "Carmen" (Bizet), H.M.V. record DB1098.
 Violin solo—Mischa Elman, "Symphonie Espagnole," Op. 21, 4th Movement (Lalo), H.M.V. DB224.
 Tenor solo—Mr. Chas. Williams, "O Flower Divine" (Wood).
 Choral—Sheffield Choir, (a) "As Pants the Heart" (Spohr); (b) "Break Forth Into Joy" (Barnby). Columbia 02664.
 Soprano solo—Miss Florence Stevens, "A Dream of Home" (Arditi).
 Pianoforte solo—Alfred Cortot, "La Cathedrale Engloutie" (Debussy), H.M.V. DB679.
 Duet—Miss Florence Stevens and Mr. Chas. Williams, "Calm Silent Night" (Goetz).
 Instrumental—Creatore's Band, "Grand March and Finale," Act 2, "Aida" (Verdi), H.M.V. C1339.

3YA, CHRISTCHURCH (306 METRES)—SUNDAY, DECEMBER 30, 1928.

- 3 p.m.: Gramophone recital of selected items.
 4.30: Close down.
 5.30: Children's song service, conducted by Uncle David.
 7.0: Relay of service from Knox Presbyterian Church. Preacher, Rev. T. W. Armour; organist and choirmaster, Mr. Billington.
 8.15 (approx.): After-church concert from studio.
 Overture—Berlin State Opera Orchestra, "The Magic Flute" (Mozart), H.M.V. record E464.
 8.23: Tenor solo—Mr. H. Blakeley, "Be Thou Faithful Unto Death" (Mendelssohn).
 8.28: 'Cello solo—Pablo Casals, "Prize Song" (from "The Mastersingers of Nuremberg"), (Wagner). H.M.V. record DB1012.
 8.32: Bass solo—Mr. E. J. Johnson, "Blow, Blow, Thou Winter Wind" (Sargeant).
 8.37: Orchestral—Philadelphia Symphony Orchestra, "Toccata and Fugue in D Minor" (Bach), H.M.V. record D1428.
 8.55: Tenor solo—Mr. H. Blakeley, "Molly Bawn" (Irish Melody), (traditional).
 8.59: Grand organ solos—(a) "The Lost Chord" (Sullivan); (b) "Largo" (Handel). H.M.V. record C1237.
 9.7: Bass solo—Mr. E. J. Johnson, "Abide With Me" (Liddle).
 9.11: Choral with orchestra—Chorus and London Symphony Orchestra, "Nunc Dimittis." H.M.V. record D1347.
 9.19: Tenor and bass duet—Messrs. H. Blakeley and E. J. Johnson, "The Day is Done" (Lohr).
 9.23: Orchestral—National Symphony Orchestra, "Orpheus in Hades" (Offenbach), Zonophone record EF16.
 9.30: Close down.

4YA, DUNEDIN (463 METRES)—SUNDAY, DECEMBER 30, 1928.

- 5.30 p.m.: Children's song service, conducted by Big Brother Bill.
 6.30: Relay of service from the Methodist Central Mission. Preacher, Rev. W. Walker.
 8.0: Gramophone recital.
 9.15: Close down.

Monday, December 31

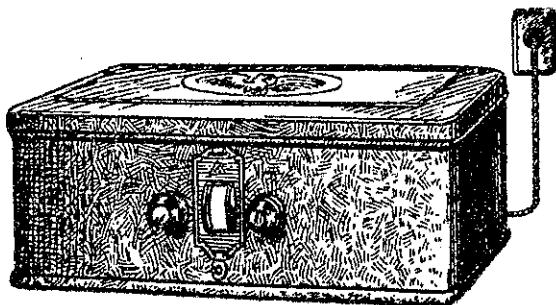
1YA, AUCKLAND (333 METRES)—MONDAY, DECEMBER 31, 1928.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session.
 7.15: News and market reports—book review.
 8.0: Chimes.
 8.1: Overture—H.M. Coldstream Guards, "Der Freischutz" (Weber) (H.M.V. Record C1335).
 8.9: Vocal quartet—Olympians, Opening Chorus (MS).
 8.13: Baritone solo—Mr. Geoffrey Colledge, "Like Stars Above" (Squire).
 8.17: Hawaiian orchestra—Tui Orchestra, (a) "Beautiful" (Shay); (b) "Get Out and Get Under the Moon" (Shay).
 8.23: Soprano solo—Miss D. Youd, "Lavender Lane" (Wilson).
 8.28: Wurlitzer organ solo—Eddie Horton, "Ramona" (Gilbert-Wayne) (Parlophone Record A2552).
 8.32: Humour—Hebrew Two, "Happy Abe and Dismal Ike."

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- 8.42: Tenor solo—Mr. Lambert Harvey, "I Heard You Go By" (Wood).
 8.46: Waltz—Dajos Bela Orchestra, "The Swallows" (Strauss) (Parlophone Record A4010).
 8.50: Contralto solo—Miss Martha Williamson, "Life is a Caravan" (Del Reigo).
 8.54: Chorus—Olympians, "Hallelujah" (from "Hit the Deck") (Youmans).
 8.58: Weather forecast.
 9.0: March medley—H.M. Grenadier Guards, "Martial Moments" (Arrgd. Winter) (Columbia Record 9065).
 9.8: Vocal duet—Miss Dorothy Youd and Mr. L. Harvey, "Sympathy" (Marshall).
 9.12: Baritone solo—Mr. G. Colledge, "A Bachelor Gay" (Tate).
 9.16: Hawaiian orchestra—Tui Orchestra, (a) "Girl of My Dreams" (Henderson); (b) "Constantinople" (Carlton); (c) "Let a Smile be Your Umbrella" (Fair).
 9.24: Contralto solo—Miss Martha Williamson, "Sorrow and I" (Clark).
 9.28: Saxophone solo—Rudy Wiedoeft, "Minuet" (Beethoven) (Columbia Record 01176).
 9.32: Humour—Hebrew Two, Some Humour.
 9.37: Tenor solo—Mr. L. Harvey, "Oh, It's Quiet Down Here" (Brake).
 9.41: Soprano and chorus—Miss D. Youd, "Someday Waiting Will End" (from "Kissing Time") (Caryll).
 9.46: Orchestra—Berlin State Opera Orchestra, "Battle Symphony" (Beethoven) (Parlophone Record E10555).
 9.54: Vocal quartet—Olympians, "Widdecombe Fair" (Heath).
 9.58: Orchestral—Royal Albert Hall Orchestra, (a) "Chanson de Matin"; (b) "Chanson de Nuit" (Elgar) (H.M.V. Record D1236).
 10.6: Bass solo—Mr. Arthur Colledge, "The Sentinel" (Oliver).
 10.10: Humour—Messrs. F. W. Barker and Zante Woods, More Humour.
 10.20: Vocal quartet—"Entrance of the Mikado" (from "The Mikado") (Sullivan).
 10.24: Wurlitzer organ solo—Milton Charles, "From the Land of the Sky-Blue Water" (Cadman) (Columbia Record 01161).
 10.28: Soprano solo—Miss Adelaide Taylor, "A May Morning" (Denza).
 10.33: Vocal quartet—St. Andrew's Quartet, "Awake, Awake" (Bennett).
 10.37: Programme of dance music.
 11.0: Tenor solo—Mr. L. Harvey, "If I Can Live" (Stephenson).
 11.4: Vocal quartet—St. Andrew's Quartet, "When a Jester Goes A-Wooing" (From "The Yeoman of the Guard") (Sullivan).
 11.8: Waltz—Royal Philharmonic Orchestra, "Blue Danube" (Strauss) (Columbia Record 04169).
 11.16: Contralto solo—Miss Phyllis Gribbin, "Beloved, It is Morn" (Aylward).
 11.20: Vocal quartet—St. Andrew's Quartet, "With a Laugh as We go Round" (Bennett).
 11.24: Humour—Messrs. F. W. Barker and Z. Woods, Still More Humour.
 11.34: Vocal quartet—St. Andrew's Quartet, "Two Beggars" (Wilson).
 11.38: Foxtrot—Ben Selvin's Orchestra, "In My Bouquet of Memories" (Akst) (Columbia Record 01137).
 11.42: Vocal quartet—St. Andrew's Quartet, "Strange Adventure" (from "The Yeoman of the Guard") (Sullivan).
 11.46: Relay description of Queen Street New Year celebrations.
 12.0: Chimes.
 12.1 New Year Greetings.
 12.10: God Save the King.

2YA, WELLINGTON (420 METRES)—MONDAY, DECEMBER 31, 1928.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sporting results to hand.
 5.0: Close down.
 6.0: Children's hour.
 7.0: News session, market reports and sports results.
 8.0: Lecturette—Mr. H. C. South, "Books—Grave and Gay."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—The Orchestra, "Plymouth Hoe" (Ansell). (A nautical overture based on familiar airs.)
 8.11: Contralto solo—Mrs. S. Kennedy, "Castle in the Air" (Old Scottish).
 8.15: Grand organ—Arthur Neale, "Cavatina" (Raff) (H.M.V. Record B2695).
 8.19: Soprano solos—Miss Jeanette Briggs, L.A.B., (a) "If I were a Lark" (Clutsam); (b) "The Robin's Song" (White).
 8.26: Humour—Mr. Doug. Stark, "Ohio" (Lauder).
 8.33: Flute solo with orchestra—Signor Truda, "Serenade" (Titl).
 8.38: Elocution—Mr. Theo. Mills, "Ring Out Wild Bells" (Tennyson).
 8.45: Baritone solos—Mr. John Prouse, (a) "Lord God of Abraham," from "Elijah" (Mendelssohn); (b) "Harbour Bay" (Moir); (c) "Mary Morrison" (Sullivan); (d) "Off to Philadelphia" (Haynes).
 8.57: Cornet solo with orchestra, "Old Folks at Home" (Foster).
 Orchestral—The Orchestra, "Celebrated Minuet" (Boccherini).
 9.7: Weather report and announcements.
 9.8: Piano and orchestra—Ignaz Friedman, "Concerto in A Minor" (Greig) (Columbia Records 02702, 3, 4 and 5).

- 9.23: Contralto solo—Mrs. S. Kennedy, "Auld Lang Syne."
 9.27: Musical monologues—Mrs. Theo. Mills, (a) "Peter"; (b) "Heaps of Lickin's" (Clarke).
 9.34: Musical comedy selection—The Orchestra, "Bing Boys" (Ayer).
 9.45: Humour—Mr. Doug. Stark, "The Portobello Lass" (Lauder).
 9.52: Soprano solos—Miss Jeanette Briggs, L.A.B., (a) "I Know a Bank" (Shaw); (b) "April Morn" (Batten).
 10.0: Dance suite—The Orchestra, Three Dances from "Tom Jones" (German)—(1) "Morris Dance," (2) "Gavotte," (3) "Jig."
 10.10: God Save the King.
 Midnight relay of Watch Night Service from St. Andrew's Presbyterian Church by combined churches.

3YA, CHRISTCHURCH (306 METRES)—MONDAY, DECEMBER 31, 1928.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour.
 7.15: News session.
 7.30: Talk by Mr. E. J. Bell on Books.
 8.0: Chimes.
 Band night, featuring the Woolston Brass Band under the conductorship of Mr. R. J. Estall and assisted by 3YA artists.
 8.1: March—The Band, "B.B." (Horne).
 Air variation—The Band, "Simeon" (Rimmer).
 8.14: Baritone solos—Mr. Bernard Rennell, (a) "Scotland's My Ain" (Chuter); (b) "Bonny George Campbell" (Keel).
 8.19: Grand organ solos—Arnold Grier, (a) "Hearts of Oak"; (b) "British Grenadiers"; (c) "Home, Sweet Home"; (d) "Bonnie Banks of Loch Lomond" (Zonophone Record 5087).
 8.23: Songs at the piano—Mr. Jock Lockhart, (a) "Ma Bonnie Jean" (Lauder); (b) "Just a Wee Deoch and Doris" (Lauder).
 8.29: Soprano solo—Mrs. A. Whitehead, "Mo Shuil A'D D'Heigh" (Repining for Thee) (Macfarren).
 8.34: Scottish comedian—Will Fyffe, "I Belong to Glasgow" (Fyffe) (Columbia Record 961).
 8.38: Selection—The Band, "Melodious Gems" (Rimmer).
 8.50: Recitation—Mr. Campbell Brown, "Bairns, Cuddle Doon."
 8.56: Violin and cinema organ—Elsie Southgate, "I Hear You Calling Me" (Marshall) (Zonophone Record 5109).
 9.0: Weather report and announcements.
 9.2: Prelude—The Band, "Prelude" (Rachmaninoff).
 9.8: Baritone solo—Mr. Bernard Rennell, "Annie Laurie."
 9.13: Bagpipes—Pipe Major Colin Ross, (a) "Mrs. J. MacColl" (March); (b) "The Piper's Bonnet"; (c) "Cameronian Rant" (Parlophone Record A2320).
 9.17: Songs at the piano—Mr. Jock Lockhart, (a) "She's the Lass for Me" (Lauder); (b) "Just Got Off the Chain" (Lauder).

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- 9.23: Three songs with band accompaniment—The Band, (a) "Killarney" (soloist, Bandsman R. Barber); (b) "Bonnie Mary" (soloist, Bandsman Crisp); (c) "Let Me Like a Soldier Fall" (Bandsman E. Williams).
- 9.33: Recitation—Mr. Campbell Brown, "A Guid Scotch Nicht" (Ogilvie).
- 9.39: Male quartets and choruses—"Convivial Songs" (Parlophone Record A2511).
- 9.43: Soprano solos—Mrs. A. Whitehead, (a) "Red, Red Path to Glory" (Moffat); (b) "Fear a Bhata" (My Boatman) (Macfarren).
- 9.49: March—The Band, "Unity" (Knoxhall).
- 10.0: Dance Music by the Bailey-Marston Band relayed from the Winter Gardens.
- 11.45: Relay from Cathedral Square of street noises and the ringing of carols by the Cathedral bells.

4YA, DUNEDIN (463 METRES)—MONDAY, DECEMBER 31, 1928.

- 8 p.m.: Studio concert.
- 10.30: Close down.

Tuesday, January 1

1YA, AUCKLAND (333 METRES)—TUESDAY, JANUARY 1, 1929.

- 3 p.m.: Afternoon session—Selected studio items.
- 4.0: Literary selection by the Announcer.
- 4.8: Studio items.
- 4.25: Sports results to hand.
- 4.30: Close down.
- 6.0: Children's session conducted by Uncle George.
- 7.15: News session—Market reports and book review.
- 8.0: Chimes.
- 8.1: Overture—Orchestra, (a) "Marche Militaire" (Schubert); (b) "Il Bacio" Waltz (Arditi).
- 8.10: Vocal trio—Snappy Three, (a) "Just Like a Melody" (Donaldson); (b) "Dream Kisses" (Lee).
- 8.16: Instrumental—Ingall's Hawaiians, (a) "Hawaiian Echoes" (arr. Brown), (b) "Hilo March" (Ferera).
- 8.24: Relay of musical entr'acte from Majestic Theatre Orchestra under Mr. J. Whiteford-Waugh.
- 8.28: Baritone solo—Mr. Fred Baker, "Ruben Ranzo" (Lane).
- 8.32: Entr'acte—Orchestra, "Minuet in G" (Padarewski).
- 8.37: Novelty—The Asquiths, Thirty Minutes' Drawing-room Entertainment.
- 9.7: Weather forecast.
- 9.9: Male quartet—Shannon Male Quartet, (a) "The Sidewalks of New York," (b) "On the Banks of the Wabash, Far Away" (Regal Record G20298).
- 9.17: Flute solo with orchestral accompaniment, "Fairly Tarapatapoum" (Foulds).
- Orchestral—Orchestra, "Hungarian Dance" (Brahms).
- 9.27: Vocal trios—Snappy Three, (a) "She's a Home Girl" (De Sylva); (b) "Vagabond King Waltz" (tenor solo) (Friml); (c) "Baby Mine" (Rupp).
- 9.34: Mezzo-soprano solo—Virginia Perry, "Moonstruck," from "Our Miss Gibbs" (Monckton) (Columbia Record 01246).
- 9.38: Instrumental—Ingall's Hawaiians, (a) "Wailana Waltz" (Roberts); (b) selected; (c) "Hawaiian Airs" (MS.).
- 9.48: Baritone solos—Mr. Fred Baker, (a) "My Blue Heaven" (Donaldson); (b) "Ramona" (Wayne).
- 9.55: Selection—Orchestra, "Glory of Russia" (Kreen).
- 10.6: Programme of dance music.
- 11.0: Close down.

2YA, WELLINGTON (420 METRES)—TUESDAY, JANUARY 1, 1929.

- 3 p.m.: Chimes of the G.P.O. clock.
- 3.1: Selected gramophone items.
- 4.30 and 4.55: Sports results to hand.
- 5.0: Close down.
- 6.0: Children's session conducted by Uncle Jim.
- 7.0: News session—Market reports and sports results.
- 7.40: Lecture by a representative of the Agricultural Department—"For the Man on the Land."
- 8.0: Chimes of the G.P.O. clock.
- 8.1: Orchestral—Dalton's Orchestra, Dance Novelties.
- 8.10: Tenor solos—Mr. Arthur Coe, (a) "Nirvana" (Adams); (b) "When the House is Asleep" (Haigh).
- 8.16: Orchestral—Dalton's Orchestra, Dance Novelties.
- 8.21: Mezzo-contralto solos—Miss Ellen Samson, (a) "A Brown Bird Singing" (Wood); (b) "Spring Comes Laughing" (Carew).
- 8.27: Orchestral—Dalton's Orchestra, Dance Novelties.
- 8.33: Comedian—Mr. Arthur Chalk, "House-Hunting" (Squires and Cecil).
- 8.37: Orchestral—Dalton's Orchestra, Dance Novelties.
- 8.43: Entertainer—Miss Marjorie Buckeridge (soubrette), "Here Comes Tootsie" (Finck).
- Soprano—Mrs. K. A. Palmer, "Love's Own Kiss," from "High Jinks" (Friml).
- Humour—Mr. and Mrs. Albert Russell, (a) "Don't Hang Out the Washing on the Aerial, Maggie"; (b) "I'm Afraid, Pretty Maid" (Gaynor).

- 9.0: Weather forecast.
- 9.1: Orchestral—Dalton's Orchestra, Dance Novelties.
- 9.10: Tenor solos—Mr. Arthur Coe, (a) "A Sprig of Rosemary"; (b) "Where Heaven Lies" (German).
- 9.16: Orchestral—Dalton's Orchestra, Dance Novelties.
- 9.22: Comedian—Mr. Arthur Chalk, "Oh, Dear, What Can the Matter Be?" (Low).
- 9.26: Mezzo-contralto solos—Miss Ellen Samson, (a) "Here in the Quiet Hills" (Carne); (b) "My Heart is Singing" (Sans Souci).
- 9.31: Orchestral—Dalton's Orchestra, Dance Novelties.
- 9.38: Entertainers—Soubrette, Miss Marjorie Buckeridge, "Snap" (Duffield).
- Soprano—Mrs. K. A. Palmer, "A Paradise for Two" (Tate).
- Humour—Mr. and Mrs. Albert Russell, (a) "Ha, Ha, Ha"; (b) "Before and After" (Reynolds).
- 9.55: Orchestral—Dalton's Orchestra, Dance Novelties.
- 10.1: Community sing—Artists, Staff, and Listeners, "Love's Old Sweet Song" (Molloy) (soloist, Mrs. Albert Russell). (Listeners are asked to join in this number with the artists and staff. This will be the first time a "Community Sing" has been broadcast.)
- 10.5: Dance programme.
- 11.0: Close down.

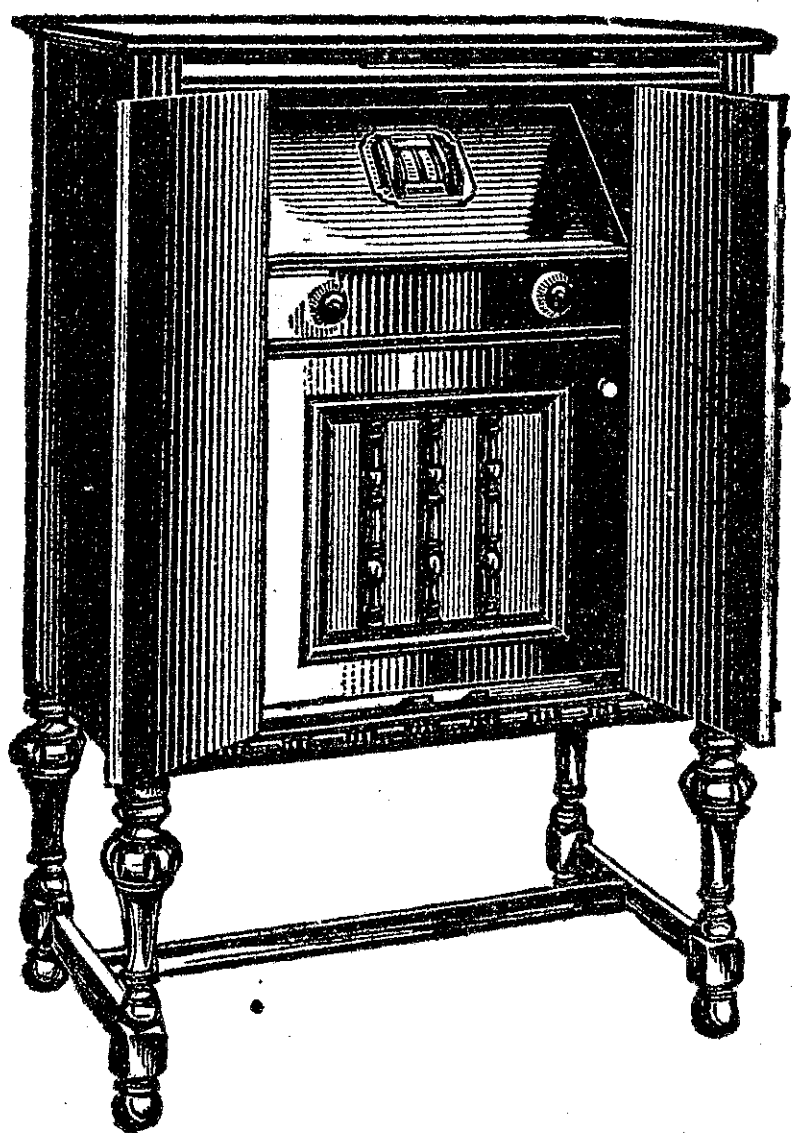
3YA, CHRISTCHURCH (306 METRES)—TUESDAY, JANUARY 1, 1929.

- 11.30 a.m.: Relay of race results at Canterbury Jockey Club's meeting at Riccarton Racecourse.
- 7.15 p.m.: News session.
- 7.30: Sports results.
- 8.0: Chimes.
- 8.1: Rebroadcast of 2YA, Wellington (conditions permitting).
- 8.7: Baritone song—Mr. Jack Smythe, "The Blue Dragoons" (Russell).
- 8.11: Military Band—H.M. Coldstream Guards, "H.M.S. Pinafore" (Sullivan) (H.M.V. Record C1283).
- 8.19: Mezzo-soprano song—Mrs. Daisy E. Pearce, "Bells of Brittany" (Lyall Phillips).
- 8.23: Violin solos—Miss Joan Carter, (a) "Come Back to Erin" (Claribel, arr. Moffat); (b) "Killarney" (Balfe, arr. Moffat).
- 8.31: Humour in song—Mr. Basil A. Johnson, "Tale of a Guinea-Pig" (Gideon).
- 8.35: Instrumental trio—The Carter Sisters, (a) "Mountain Greenery," from "The Girl Friend" (Rogers and Paul); (b) "The Girl Friend" (Rogers and Paul).
- 8.45: Contralto songs—Mrs. Nellie Whitworth, (a) "The Bells of St. John" (Mallinson); (b) "St. Nicholas' Day in the Morning" (Easthope Martin).
- 8.50: Recital—Mr. W. H. Moses, "The Frenchman and the Flea-Powder."
- 8.55: Tenor songs—Mr. W. J. Trewern, (a) "Ask Me No More" (Robert A. Horn); (b) "Achal by the Sea" (Rosada Lawrance).
- 8.59: Hawaiian selection—Hilo Hawaiian Orchestra, "Sweet Hawaiian Dream" (H.M.V. Record B2328).
- 9.3: Weather report.
- 9.5: March—H.M. Coldstream Guards, "Colonel Bogey" (Alford) (H.M.V. Record B2408).
- 9.9: Baritone song—Mr. Jack Smythe, "Rose Marie" (Friml).
- 9.13: Orchestra—New Light Symphony Orchestra, (a) "Glow-Worm Idyll" (Lincke), (b) "Hearts and Flowers" (Tobani) (Zonophone Record EF20).
- 9.17: Mezzo-soprano songs—Mrs. Daisy E. Pearce, (a) "Sing Me a Merry Lay" (Williams), (b) "Song of Other Years" (Lennox).
- 9.22: Violin solo—Miss Joan Carter, "Chanson Mauresque" (Poznanski).
- 9.26: Humour song—Mr. Basil A. Johnson, "I Wonder How I Look When I'm Asleep" (De Sylva).
- 9.31: Instrumental trio—The Carter Sisters, (a) "The Blue Room," from "The Girl Friend" (Rogers), (b) "Dancing Tambourine," from "Hit the Deck" (Polla).
- 9.41: Contralto song—Mrs. Nellie Whitworth, "Horses of the Dawn" (Mary Brett).
- 9.45: Recital—Mr. W. H. Moses, "Father Riley's Horse" (Banjo Patterson).
- 9.50: Tenor song—Mr. W. J. Trewern, "In Old Madrid" (Trottere).
- 9.54: Male quartet—Shannon Male Quartet, "The Sidewalks of New York" (Regal Record C20298).
- 9.58: Medley—Savoy Orpheans, "Round the World" (arr. Somers) (H.M.V. Record C1223).
- 10.6: Dance music.
- 11.0: Announcement.
- Close down.

4YA, DUNEDIN (463 METRES)—TUESDAY, JANUARY 1, 1929.

- 12 noon: Town Hall chimes.
- Mid-day session.
- 2.0: Close down.
- 3.0: Town Hall chimes.
- 3.1: Gramophone concert.
- 4.25: Sports results.
- 4.30: Close down.
- 6.0: Town Hall chimes.
- 6.1: Children's session conducted by Big Brother Bill.
- 7.15: News session.
- 8.0: Town Hall chimes.
- 8.1: Relay of orchestral music from the New Empire Theatre Orchestra.

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WELLINGTON

- 8.11: Popular songs—Mr. J. B. McConnell, (a) "The Song is Ended" (Berlin), (b) "Just a Cottage Small" (Hanley).
 8.18: Violin solo—Miss Eva Judd, "Persian Rosebud" (Nicholls).
 8.21: Light soprano solo—Miss Mona Melville, "I'm Such a Silly When the Moon Comes Out" (Higgs).
 8.28: Popular songs at the piano—Mr. Jack Stewart, (a) "The Blue Room" (Rodgers), (b) "The Girl Friend" (Rodgers).
 8.36: Recital—Miss Roberta Williams, "Young Fellow My Lad" (Service).
 8.40: Band and whistlers—Arthur Pryor's Band, "The Whistler and His Dog" (Pryor) (H.M.V. Record EA26).
 8.44: Popular song hit—Miss Betty Roberts, "Simple Melody" (Kern).
 8.47: Organ solo—G. T. Pattman, "Humoresque" (Dvorak).
 8.51: Humour—Pastor W. D. More, "Some Humours of Old-Time New Year's Days."
 9.6: Weather forecast.
 9.8: Dance Orchestra—The Troubadours, (a) "When Love Comes Stealing" (Rapee-Pollock), (b) "A Kiss Before Dawn" (Perkins) (H.M.V. Record EA410).
 9.16: Humorous song—Mr. J. B. McConnell, "Show Me the Way to Go Home" (King).
 9.19: Violin solos—Miss Eva Judd, (a) "Dear, on a Night Like This" (Conrad), (b) "Paradise Isle" (Goering).
 9.25: Light soprano solos—Miss Mona Melville, (a) "Mary" (Higgs), (b) selected.
 9.31: Orchestral—Ketelbey's Concert Orchestra, "Sanctuary of the Heart" (Ketelbey) (Columbia Record 02690).
 9.38: Popular song at the piano—Mr. Jack Stewart, "I'm in Love Again" (Ayer).
 9.42: Recitations—Miss Roberta Williams, (a) "Uncle Josh's Ideas on Women" (Anon.), (b) "He Fell Among Thieves" (Newbolt).
 9.48: Cornet and trombone duet—"Barcarolle" (Offenbach) (Regal Record G20231).
 9.52: Popular song hits—Miss Betty Roberts, (a) "That Old Irish Mother" (Von Tilzer); (b) "Little Dutch Garden" (Von Tilzer).
 9.58: Dance orchestra—Bert Firman's Orchestra, waltz, "I'm Away from the World" (Clark, Pollack) (Zonophone Record 5099).
 10.2: Dance music.
 11.0: Close down.

Wednesday, January 2

1YA, AUCKLAND (333 METRES)—WEDNESDAY, JANUARY 2, 1929.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session conducted by Uncle Tom.
 7.15: News and market reports.
 7.45: Talk on "Physical Culture" by Mr. Norman Kerr.
 8.0: Chimes. Vocal programme presented by "Savoy Octette."
 8.1: Military Band—Royal Italian Band, (a) "Marcia Reale" (Italian Royal March); (b) "Inno Di Garibaldi" (Garibaldi's Hymn) (Columbia Record 01182).
 8.9: Chorus—"Hunting Chorus" (from "Dorothy") (Cellier).
 8.14: Vocal solo—"Silent Woods" (Tully).
 8.18: Recital—Miss Maisie Carte-Lloyd, "Patience of Job."
 8.23: Solo and chorus—"The Toy Monkey" (from "The Geisha") (Jones).
 8.28: Orchestral—Columbia Symphony Orchestra "March of the Toys" (Herbert) (Columbia Record 02651).
 8.32: Chorus—"The Lost Chord" (Sullivan).
 8.37: Relay of orchestral entr'acte from the Majestic Theatre Orchestra, under the conductorship of Mr. J. Whiteford Waugh.
 8.45: Chorus—"Blue Danube Waltz" (Strauss).
 8.50: Violin solo—Sascha Jacobsen, "Pale Moon" (Logan) (Columbia Record 01146).
 8.54: Solo—"Queen of My Heart" (Cellier).
 8.58: Weather forecast.
 9.0: Relay of vocal interlude from the Majestic Theatre.
 9.6: Orchestral—Ketelbey's Concert Orchestra, "Sanctuary of the Heart" (Ketelbey) (Columbia Record 02690).
 9.14: Chorus—"Song of Minnetonka" (Lieurance).
 9.18: Pianoforte solo—Mr. Cyril Towsey, "Last Movement—Moonlight Sonata" (Beethoven).
 9.22: Solo—"Beautiful Beatrice" (Mallinson).
 9.26: Recitals—Miss Maisie Carte-Lloyd, (a) "Pennarby Mine"; (b) "The Funny Story."
 9.34: Chorus—"Waltz Song" (from "Faust") (Gounod).
 9.39: Organ solo—G. T. Pattman, "In a Monastery Garden" (Ketelbey), (Columbia Record 02683).
 9.43: Solo—"Monarch of the Storm" (Mullen).
 9.47: Chorus—"Song of Old England" (Curwen).
 9.51: Solo and chorus—"O Soldier, Soldier" (Traditional).
 9.55: Selection—National Military Band, "The Bells of St. Malo" (Rimmer) (Zonophone Record 5102).
 9.58: Solo and chorus—"My Hero" (from "The Chocolate Soldier") (Strauss).
 10.2: Finale—"Land of Hope and Glory" (Elgar).
 10.6: God Save the King.

2YA, WELLINGTON (420 METRES)—WEDNESDAY, JANUARY 2, 1929. SILENT DAY.

3YA, CHRISTCHURCH (306 METRES)—WEDNESDAY, JANUARY 2, 1929

- 11.30 a.m.: Results of Canterbury Jockey Club's race meeting at Addington.
 3 p.m.: Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session.
 7.0: News session.
 7.30: Addington stock market reports.
 8.0: Chimes.
 8.1: Grand Opera—Special presentation of "The Valkyrie" (Wagner), (3rd. instalment) (H.M.V. Records D1328, D1329, and D1327).
 Soprano and tenor—"Siegfried Challenges Hunding."
 Quartet with orchestra—"The Combat: Siegmund is Slain."
 Orchestra and chorus—"The Ride of the Valkyries" (Prelude to Act 3).
 Soprano with orchestra and chorus—"Brunnhilde Gives Sieglind the Broken Sword."
 8.21: Baritone solo—Mr. A. G. Thompson, "Over the Desert" (Kellie).
 8.25: Violin solo—Miss Joan Carter, "Moment Musical" (Schubert).
 8.30: Duet—Dulcet Duo, "Awake" (Pellissier).
 8.32: Orchestral—Royal Opera Orchestra, "Faust Ballet Music" (1st. and 2nd. Movements—Allegretto and Adagio) (Gounod), (H.M.V. Record C1462).
 8.37: Contralto solo—Miss Nellie Lowe, "The Storm" (Hullah).
 8.41: Instrumental trios—Carter Sisters Instrumental Trio, (a) "Allegretto" (from "Orpheus in the Underworld") (Offenbach); (b) "The Bohemian Girl" (Balfe).
 8.51: Weather forecast.
 8.54: Orchestral—Royal Opera Orchestra, "Faust Ballet Music" (Gounod), 3rd. and 4th., 5th. and 6th. Movements—(Allegretto, Maestoso, Moderato con Moto and Allegretto) (H.M.V. Records C1462 and C1463).
 9.2: Quartet—Dulcet Quartet, "Come to the Fair" (Martin).
 9.5: Recital—Mr. Sidney Comfort, "Toasts" (Bread and Buttered) (MS).
 9.11: Soprano solo—Miss Margaret Lorimer, "Ring, Bells, Ring" (Day).
 9.15: Violin solo—Miss Joan Cartet, "Song of India" (Rimsky-Korsakov).
 9.20: Baritone solo—Mr. A. G. Thompson, "Serenade in Summer" (Denza).
 9.24: Instrumental trios—Carter Sisters Instrumental Trio, (a) "Cavalleria Rusticana" (Mascagni); (b) "Barcarolle" (from "Tales of Hoffman") (Offenbach).
 9.32: Contralto solo—Miss Nellie Lowe, "Now's the Time to Love" (Gounod).
 9.36: Humour—Mr. Sydney Comfort, "Having an Argument" (MS).
 9.41: Tenor solos—Mr. T. G. Rogers, (a) "A Legend" (Tschalkowsky); (b) "Silent Moon" (Williams).
 9.47: Orchestral—Royal Opera Orchestra, "Faust Ballet Music" (Gounod), 7th. Movement (Vivo) (H.M.V. Record C1463).
 9.51: Quartet—Dulcet Quartet, "Old Folks at Home" (Cornwall).
 Close down.

4YA, DUNEDIN (463 METRES)—WEDNESDAY, JANUARY 2, 1929.

- 12 noon: Town Hall chimes.
 Mid-day session.
 2.0 p.m.: Close down.
 7.0: Town Hall chimes.
 7.1: Request gramophone recital.
 7.40: News session.
 8.0: Town Hall chimes.
 8.1: Orchestral—Columbia Symphony Orchestra, "Maritana" Overture (Wallace) (Columbia Record 02682).
 8.9: Recital—Miss Madge Yates, "The Barrel Organ" (Noyes).
 8.14: Violin solo—Miss Eva Judd, "Nocturne in E Flat" (Chopin).
 8.17: Song cycle—"The Daisy Chain," presented by the 4YA Harmonists with instrumental accompaniment by the 4YA Broadcasting Trio—
 (Soprano Miss Mae Matheson,
 Mezzo-soprano Miss Mollie Andrews,
 Tenor Mr. H. A. Johnston,
 Baritone Mr. A. Bicknell.)
 Quartet—"Foreign Children" (Liza Lehmann).
 Mezzo-soprano solo—"Fairies" (Liza Lehmann).
 Baritone solo—"Keepsake Mill" (Liza Lehmann).
 Soprano solo—"If no one ever Marries Me" (Liza Lehmann).
 Tenor solo—"Stars" (Liza Lehmann).
 Quartet—"Seeing the World" (Liza Lehmann).
 Mezzo-soprano solo—"The Ships That Sailed into the Sun" (Liza Lehmann).
 Soprano solo—"The Swing" (Liza Lehmann).
 Baritone solo—"Mustard and Cress" (Liza Lehmann).
 Tenor solo—"The Moon" (Liza Lehmann).
 Quartet—"Thank You Very Much Indeed" (Liza Lehmann).
 Quartet—"Blind Man's Buff" (Liza Lehmann).
 8.56: Orchestral—London Theatre Orchestra, "Lilac Time" (Schubert-Clut-sam) (Columbia Record 02699).
 9.4: Weather forecast.
 9.6: Male quartets—Shannon Male Quartet, (a) "The Sidewalks of New York"; (b) "On The Banks of the Wabash, Far Away" (Regal Record G20298).
 9.14: Cello solo—Mr. P. J. Palmer, "Humoresque" (Dolb).

- 8.20: Soprano and male quartet—Norah Blaney and the Ramblers, "Just Like a Darby and Joan" (Columbia Record 01170).
 9.24: Pianoforte solo—Miss Aileen Young, "Solveig's Song" (Grieg).
 9.28: Tenor with orchestra—Chas. Hackett, "A Brown Bird Singing" (Woods and Borrie) (Columbia Record 03545).
 9.32: Recitals—Miss Madge Yates, (a) Child Impersonation—"Forgive" (Milne); (b) "The Rider at the Gate" (Kipling).
 9.40: Solo and chorus—Raymond Newell and chorus, (a) "Johnny Come Down to Hilo"; (b) "The Hog's Eye Man" (Columbia Record 01024).
 9.44: Violin solo—Miss Eva Judd, "Midnight Bells" (Kreisler).
 9.48: Comedian with orchestra—Frank Crumit, "The Song of the Prune" (H.M.V. Record EA366).
 9.52: 'Cello solo—Mr. P. J. Palmer, "Berceuse De Jocelyn" (Godard).
 9.58: Solo and chorus—Virginia Perry and chorus, "My Hero" (from "The Chocolate Soldier") (Strauss) (Columbia Record 01173).
 10.2: Close down.

Thursday, January 3

1YA, AUCKLAND (333 METRES)—THURSDAY, JANUARY 3, 1929.

- 3.0 p.m.: Afternoon session—selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session conducted by Uncle Mack.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: March—Philadelphia Symphony Orchestra, "Marche Slave" (Tchaikowsky) (H.M.V. Record D1046).
 8.9: Baritone solo—Mr. Leo O'Malley, "On the Road to Mandalay" (Hedgcock).
 8.13: Instrumental trio—Auckland trio, "1st Movement—Trio in C Minor" (Mendelssohn).
 8.21: Soprano solo—Miss Violet Harrison, "Grey Eyes" (Phillips).
 8.25: Kinema organ solo—Chas. W. Saxby, "Classica" (Potpourri selection), (Arrgd. Ewing) (Zonophone Record A334).
 8.33: Tenor solo—Mr. A. E. Davies, "Thora" (Adams).
 8.37: Violin solo—Miss Ina Bosworth, "Ave Maria" (Schubert-Wilhelmj).
 8.41: Talk—Mr. A. E. Chappell, M.A., "The Maori—His Art."
 9.0: Weather forecast.
 9.2: Selection—National Symphony Orchestra, "Aida" (Verdi) (Zonophone Record A340).
 9.6: Soprano solo—Miss Marjorie Fair, "Waltz Song" (from "Tom Jones") (German).
 9.10: Instrumental trio—Auckland Trio, "Two French Dances" (Bomblé).
 9.18: Baritone solo—Mr. Len Keven, "Ships" (Brett).
 9.22: Orchestral—Chicago Symphony Orchestra, "Slavonic Dance in G Minor" (Dvorak) (H.M.V. Record D1432).
 9.26: Presentation of excerpts from "The Lilac Domino" (Carr) produced under the direction of Madame Irene Ainsley.

CAST.

Georgene Mrs. Bon.
 Leonie Miss Violet Harrison.
 Elliston Mr. Len Keven.
 Andre Mr. Leo O'Malley.

Chorus and duet—"True Love Will Find a Way."

Solo—"Let the Music Play."

Duet—"Where Love is Waiting."

Trio—"Lilac Domino."

Entr'acte—Orchestral selection, "Lilac Domino" selection 1, (H.M.V. Record C847).

Solo and chorus—"For Your Love I'm Waiting."

Ensemble—"Lilac Domino."

Duet and chorus—"Song of the Chimes."

Duet—"What Is Done You Never Can Undo."

Entr'acte—Orchestral selection, "Lilac Domino" selection 2 (H.M.V. Record C847).

Chorus—"King Carnival."

Song and chorus—"All Line Up In a Queue."

10.0: Close down.

2YA, WELLINGTON (420 METRES)—THURSDAY, JANUARY 3, 1929.

- 3.0 p.m.: Chimes of the General Post Office Clock, Wellington.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sporting results to hand.
 5.0: Close down.
 6.0: Children's session conducted by Aunt Gwen.
 7.0: News session, market reports and sports results.
 7.40: Lecturette, Mr. Alfred Blaxall—"Personality and Success."
 8.0: Chimes of the General Post Office Clock, Wellington. Studio concert by the Artillery Band under the Conductorship of Capt. T. Herd, V. D., assisted by 2YA artists.
 8.1: Overture—Gavotte—Artillery Band—"The Golden Star" ("Minolo").
 8.13: Quartette—The Lyric Quartette—"Lovely Night" (Chwatal).
 8.17: Vocal Solo with Novelty Accompaniment—Sidney Burchall, "The Adorable Outcast" (Hayes) (Parlophone Record A2450).
 8.21: Elocution—Miss Rose Carte—"A Ker Chew Duet" (Pertwee).

- 8.26: Baritone solo—Mr. D. M. Anderson, "A Warwickshire Wooing" (James).
 8.30: Selection—Artillery Band—"Musical Bouquet" (Round). Cornet solo—Bandsman W. Sneddon, "A Dream" (Herd).
 8.43: Tenor solo—Mr. Chas. Williams, "Farewell in the Desert" (Sanderson).
 8.47: Vibraphone Novelty—Rudy Star Three "Diane" (Rapee).
 8.51: Duet—Messrs. D. M. Anderson and W. Goudie, "Two Gendarmes" (Genevieve) (Offenbach).
 8.54: Waltz—Artillery Band, "Donan Wellen" (Ivanovici).
 9.1: Weather report and announcements.
 9.2: Bass solo—Mr. W. Binet Brown, "Ave Vinum" (Clough-Leigher).
 9.6: Vocal solo with orchestra—Ninon Vallin, "Jewel Song" (Faust) (Gounod).
 9.10: Horn Trio with Band accompaniment—Bandsmen Cundy, Riches and Anear—"Gloaming" (Evans).
 Descriptive Piece—Artillery Band, "A Hunting Trip" (Holloway). (Synopsis: Early Morning. (Birds Singing), Huntsmen Rise. Song "Old Towler," Huntsman's Horn in the Distance. Going to the Meet. Arrival of the Hounds. Song—"A-Hunting We Will Go." The Find. In Full Cry. In at the Death. The Return Home. "Huntsmen's Chorus"—"John Peel." Finale.)
 9.21: Elocution—Miss Rose Carte—"Lides to Bary Jade" (Pertwee), "One Type of Suburban Party" (Fish).
 9.27: Xylophone Novelty—Rudy Star Three—"Polly" (Zamecnik) (Parlophone Record A2548).
 9.31: Quartette—The Lyric Quartet—"The Two Crows" (Allan).
 9.35: Irish Ragtime—Artillery Band—"Hooligan" (Macks-Beyer). Humoresque—Artillery Band—"The Coster's Courtship" (MacKenzie).
 9.44: Baritone solo—Mr. W. Goudie (a) "The Lute Player" (Allitsen); (b) "To My First Love" (Lohr).
 9.50: Trio—Lyric Trio—"Ye Shepherds Tell Me" (Mazzinghi).
 9.54: March—Artillery Band—"King Cotton" (Sousa).
 10.0: National Anthem.

3YA, CHRISTCHURCH (306 METRES)—THURSDAY, JANUARY 3, 1929.

- 3.0 p.m.: Afternoon session—selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour.
 7.15: News session.
 7.30: Talk—under auspices of Canterbury Progress League.
 8.0: Chimes.
 8.1: Rebroadcast of 2YA Wellington (conditions permitting).
 8.10: Tenor solos, followed by quartet—Mr. Russell Sumner and Melodious Four, (a) "Go Lovely Rose" (Quilter); (b) "Five Eyes" (Gibbs); "Swing Low, Sweet Chariot" (Arr. Burleigh).
 8.17: 'Cello solo—Miss Charlotte Carter, "Berceuse De Jocelyn" (Godard).
 8.25: Recitation—Mr. Hiram Dunford, "The Bells" (Poe).
 8.31: Orchestral—Royal Opera Orchestra, "Sylvia Ballet" (Delibes) (Intermezzo and valse lente) (H.M.V. Record C1417).
 8.35: Soprano solo, followed by contralto and bass duet—Miss Frances Hamerton, (a) "Solveigh's Song" (Grieg); (b) "The Cupboard" (Harris); "Look Down, Dear Eyes" (Fisher).
 8.42: Instrumental Trio—Carter Sisters Instrumental Trio, (a) "In a Monastery Garden" (Ketelby); (b) "From a Russian Village" (Mursden).
 8.50: Vocal Quartets—Melodious Four, "Hunting of the Snail" (Davies); (b) "Lullaby and Willie Winkie" (Davies).
 8.56: Instrumental Sextet—Victor O of Sextet, "Minuet" (Boccherini) (H.M.V. Record B2697).
 9.0: Weather report and announcements.
 9.1: Orchestral—Berlin State Opera Orchestra, "The Master Singers of Nuremberg" (Wagner) (H.M.V. Record D1260).
 9.9: Contralto solos—Miss Belle Renaut, (a) "The Woman and the Horse" (Mallinson); (b) "I Attempt From Love's Sickness to Fly" (Purcell).
 9.15: Soprano and tenor duet—Miss Frances Hamerton and Mr. Russell Sumner, "Swing Song" (Messenger).
 Bass solo—Mr. T. D. Williams, "The Wanderer" (Schubert).
 9.23: 'Cello solo—Miss Charlotte Carter, "Love's Old Sweet Song" (Molloy).
 9.31: Recitation—Mr. Hiram Dunford, "Casket Scene" from "Merchant of Venice" (Shakespeare).
 9.37: Piano and orchestra—Ignaz Friedman, "Concerto in A Minor" 1st Movement (Grieg) (Columbia Records 02730-4).
 9.52: Bass solo—Mr. T. D. Williams, "I Am a Roamer" (Handel).
 9.56: Instrumental Trios—Carter Sisters Instrumental Trio, (a) "Polish Dance" (Zamecnik); (b) "Cradle Song" (Schubert); (c) "La Coquette" (Elliot).
 10.4: Quartet—Melodious Four—"A Spring Song" (Pinsuti).
 God Save the King.

4YA, DUNEDIN (463 METRES)—THURSDAY, JANUARY 3, 1929.

SILENT DAY.

Friday, January 4

1YA, AUCKLAND (333 METRES)—FRIDAY, JANUARY 4, 1929.

- 3 p.m.: Afternoon session—Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Selected studio items.

- 4.25: Sports results to hand.
 4.30: Close down.
 6.0: Children's session, conducted by Nod and Aunt Jean.
 7.15: News and market reports.
 8.0: Chimes.
 8.1: Overture—Orchestra, "Stradella" (Flotow).
 8.11: Quartet—St. Andrew's Quartet, "The Torpedo and the Whale" (Audran).
 8.15: Pianoforte solo—Mr. Cyril Towsey, "Two Arabesques" (Debussy).
 8.22: Bass solo—Mr. Arthur Colledge, "A Soldier's Song" (Maschioni).
 8.28: Grand organ solo—Edwin H. Lemare, "Andantino in D Flat" (Lemare) (H.M.V. Record D1455).
 8.32: One-act drama—Auckland Comedy Players, under the direction of Mr. J. F. Montague, "Campbell of Kilmohr" (Ferguson).
 8.52: Entr'acte—Orchestra, (a) "Andantino" (Lemare, arrgd. Bellingham); (b) "Waiata Poi" (Hill).
 9.2: Weather forecast.
 9.4: Contralto solo—Miss Phyllis Gribbin, "A Summer Night" (Goring Thomas).
 9.8: 'Cello solo—Pablo Casals, "Prize Song" (from "The Mastersingers of Nurtmberg") (Wagner) (H.M.V. Record DB1012).
 9.12: Vocal duet—Messrs. Stanley Raymond and Arthur Colledge, "Flow Gently, Deva" (Cooke).
 9.16: Soprano solos—Miss Cecilia Duncan, (a) "I Love the Moon" (Ruben); (b) "I Hear a Thrush at Eve" (Cadman).
 9.22: Playette—Auckland Comedy Players, "Lights Out" (comedy sketch).
 9.38: Quartet—St. Andrew's Quartet, "Come and See Our Pantomime" (Oliver).
 9.41: Orchestral—Orchestra, "Slavonic Rhapsody No. 3" (Dvorak).
 9.49: Duet—Mr. S. Raymond and Miss Adelaide Taylor, "Enchantment" (Oliver).
 9.52: Soprano solo—Miss C. Duncan, "The Pixie Piper" (Elliott).
 9.58: Selection—Orchestra, "The Mikado" (second selection) (Sullivan).
 10.7: Vocal quartet—St. Andrew's Quartet, "So Glad of Heart" (Oliver).
 10.11: Close down.

2YA, WELLINGTON (420 METRES)—FRIDAY, JANUARY 4, 1929.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 3.30 and 4.55: Sporting results to hand.
 5.0: Close down.
 6.0: Children's hour.
 7.0: News session, market reports and sports results.
 7.40: Lecturette—Mr. N. R. Jacobsen, "What Your Boy Wants at School and How to Get It."
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—The Orchestra, "Der Freischutz" (Weber).
 8.11: Baritone solo—Mr. S. E. Rodger, "A Bachelor Gay," from "Maid of the Mountains" (Tate).
 8.15: Elocution—Mr. Barton Ginger, "Como" (Miller).
 8.22: Soprano solo—Miss Eileen Kimbell, "The Pipes of Pan," from "The Arcadians" (Monckton).
 8.26: Instrumental—The Orchestra, (a) "Minuet" (Paderewski); (b) "Blue Danube Waltz" (Strauss).
 8.36: Tenor solos—Mr. Oscar Dyer, (a) "Eleanor" (Coleridge-Taylor); (b) "When Other Lips," from "Bohemian Girl" (Balfe).
 8.43: Male Quartets—Parlophone Melody Co., "Convivial Songs" (Parlophone Record A2511).
 8.49: Contralto solo—Mrs. T. Treacey, "Ave Maria" (Mascagni).
 8.53: Instrumental—The Orchestra, repeat item.
 9.1: Weather report and announcements.
 9.2: Ballet suite—The Orchestra, "Ballet Egyptien" (Luigini).
 9.10: Baritone solo—Mr. S. E. Rodger, "Sunshine and Love," from "Gaiety Girl" (Jones).
 9.10: Violin and cinema organ—Elsie Southgate, "I Hear You Calling Me" (Marshall) (Zonophone Record 5109).
 9.14: Soprano solos—Miss Eileen Kimbell, (a) "O Mio Babbino Caro" (Puccini); (b) "Madrigal" (Chaminade).
 9.21: Elocution—Mr. Barton Ginger, "Mr. Grindle and Cleanliness" (Thomas).
 9.27: Contralto solo—Mrs. T. Treacey, "Vo Ci Donne."
 9.33: Instrumental—The Orchestra, "Merrie England" (German).
 9.43: Tenor solos—Mr. Oscar Dyer, (a) "Passing-By" (Purcell); (b) "Sincerity" (Clarke).
 9.50 Chorus—"Sea Songs" (H.M.V. Record EB25).
 9.54: Instrumental—The Orchestra, (a) Novelty, "In Birdland"; (b) March, "Independencia March" (Hall).
 10.4: God Save the King.

3YA, CHRISTCHURCH (306 METRES)—FRIDAY, JANUARY 4, 1929.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour.
 7.15: News session.
 8.0: Chimes.
 8.1: Overture—Rebroadcast of 2YA, Wellington (conditions permitting).
 Popular programme with vocal selections from "Florodora" by Stuart.
 8.10: Soprano solo—Miss Renetta Rings, "The Silver Star of Love" (Stuart).
 Soprano and tenor duet—The Valencia Duo, "Somebody" (Stuart).

- 8.18: Foxtrot—Nat Shilkret's Orchestra, "Till We Meet Again" (Egan) (H.M.V. Record EA412).
 8.22: Bass solo—Mr. F. A. Millar, "Phrenology" (Stuart).
 8.26: Instrumental trios—Carter Sisters Instrumental Trio, (a) "Indian Love Call," from "Rose Marie" (Friml); (b) "A Shady Tree" (Donaldson).
 8.32: Humour—Mr. George Titchener, "The Modest Curate" (Reynolds).
 8.37: Military band—National Military Band, "Christchurch Chimes" (Arr. Hare) (Zonephone Record 5119).
 8.41: Tenor solo—Mr. W. Bradshaw, "The Shade of the Palm" (Stuart).
 8.45: Violin and cinema organ—Elsie Southgate, "I Hear You Calling Me" (Marshall); (Zonophone Record 5109).
 8.49: Contralto solo—Miss Anita Graham, "Tact" (Stuart).
 Quartet—Valencia Quartet, "Tell Me, Pretty Maiden" (Stuart).
 9.0: Weather report and announcements.
 9.3: Orchestral—London Theatre Orchestra, "Lilac Time" (Schubert-Clut-sam) (Columbia Record 02699).
 9.11: Tenor and bass duet—Mr. W. Bradshaw and Mr. F. A. Millar, "Love and War" (Cooke).
 9.16: Instrumental trio—Carter Sisters Instrumental Trio, selections from "My Son John" (Strauss).
 9.22: Contralto solo—Miss Anita Graham, "On a Spring Morning" (Wood).
 Soprano and contralto duet—Miss Anita Graham and Miss Renetta Rings, "Arise, O Sun" (Day).
 9.30: Humour—Mr. George Titchener, "Lawyer's Language" (Edwards).
 9.35: Bass solo—Mr. F. A. Millar, "A Hundred Fathoms Deep" (Jude).
 9.39: Instrumental trios—Carter Sisters Trio, (a) "Painting Pretty Pictures" (Weddell); (b) "My Ohio Home" (Donaldson); (c) "Little Log Cabin of Dreams" (Hanley-Dowling).
 9.49: Tenor solo—Mr. W. Bradshaw, "Phyllis Picking Roses" (Denza).
 9.49: Novelty—Ketelby's Concert Orchestra, "In a Monastery Garden" (Ketelby) (Columbia Record 02685).
 9.56: Soprano solo—Miss Renetta Rings, "Oh, Take My Heart" (McLean).
 Vocal quartet—Valencia Quartet, "The Sweepers" (Elgar).
 10.5: God Save the King.

4YA, DUNEDIN (463 METRES)—FRIDAY, JANUARY 4, 1929.

- 12 noon: Town Hall chimes.
 Mid-day session.
 2.0: Close down.
 3 p.m.: Town Hall chimes.
 3.1: Gramophone concert.
 3.15: Talk on "Fashions" by Miss Beuceleuch of the D.S.A., Ltd.
 3.30: Relay of afternoon-tea music from the Savoy.
 3.40: Studio items.
 4.0: Relay of music from the Savoy.
 4.15: Gramophone items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Town Hall chimes.
 6.1: Children's session, conducted by Aunt Sheila and Big Brother Bill.
 7.15: News session.
 8.0: Town Hall chimes.
 8.1: Overture—Berlin State Opera Orchestra, "The Magic Flute" (Mozart) (H.M.V. Record E464).
 8.9: Contralto solos—Miss Irene Horniblow, (a) "Life and Death" (Coleridge-Taylor); (b) "The Arrow and the Song" (Balfe).
 8.15: 'Cello solo—W. H. Squire, "Melody in F" (Rubenstein) (Columbia Record 04173).
 8.19: Baritone solo—Mr. R. B. Macdonald, "Song of the Sword" (Clough-Leighton).
 8.22: Orchestral—Chicago Symphony Orchestra, "Slavonic Dance in G Minor" (Dvorak) (H.M.V. Record D1432).
 8.26: Mezzo-soprano solos—Miss Dorothy Sligo, (a) "Dawn, Gentle Flower" (Bennett); (b) "Love, the Jester" (Phillips).
 8.35: Pianoforte solo—Miss Aileen Young, "Impromptu in A Flat" (Schubert).
 8.40: Contralto solo—Miss Irene Horniblow, "Only a River Running By" (Hopkins).
 8.43: Grand organ solo—"Largo" (Handel) (H.M.V. Record C1237).
 8.47: Baritone solos—Mr. R. B. Macdonald, (a) "Life" (Blumenthal); (b) "Tavern Song" (Fisher).
 8.54: Orchestral—Royal Opera Orchestra, "Sylvia Ballet—Pizzicato and Procession of Bacchus" (Delibes) (H.M.V. Record D1418).
 9.2: Weather forecast.
 9.4: Mezzo-soprano solo—Miss Dorothy Sligo, "The Lass with the Delicate Air" (Arne).
 9.7: Band—National Military Band, "The Gladiator's Farewell" (Blankenburg) (Zonophone Record 5102).
 9.11: Grand Opera—Special presentation of "The Valkyrie" (Wagner) (3rd instalment) (H.M.V. Records D1328, D1329 and D1327).
 Soprano and tenor—Louise Trenton and Walter Widdop, "Siegmond Challenges Hunding."
 Quartet with orchestra—"The Combat: Siegmund is Slain."
 Orchestra and chorus—"The Ride of the Valkyries" (Prelude of Act 3).
 Orchestra and chorus—"The Assembled Valkyries Await Brunnhilde."
 Soprano with orchestra and chorus—"Brunnhilde Gives Sieglinde the Broken Sword."
 9.31: Relay of dance music from the Savoy.
 10.0: Close down.

Saturday, January 5

1YA, AUCKLAND (333 METRES)—SATURDAY, JANUARY 5, 1929.

- 3 p.m.: Selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's session conducted by Cinderella.
 7.15: Sports results.
 7.30: News and market reports.
 8.0: Chimes.
 8.1: Overture—National Military Band, "Christchurch Chimes" (Arrgd. Hare) (Zonophone Record 5119).
 8.5: Contralto solos—Miss Bessie Le King, (a) "Little Mary Fawcett"; (b) "A Fat Little Feller Wid His Mammy's Eyes" (Gordon).
 8.11: Trio—Auckland Trio, "Finale in E Flat Trio" (Beethoven).
 8.20: Vaudeville—Snappy Three, (a) "A Bungalow and You" (MS); (b) "Only a Rose" (Friml).
 8.29: Humour—Frank Crumit, "No News" (H.M.V. Record EA387).
 8.32: Novelty—Bohemian Duo, (a) "Ako Ako" (Maori) (MS); (b) "Matangi" (Maori) (MS).
 8.39: Cello solo—Miss Moolly Wright, "Andantino" (Martini).
 8.45: Jazz pianoforte selection—Miss Beryl Poulton, "In a Little Love Nest" (Tucker).
 8.52: Baritone and male quartet—Jno. Goss and Cathedral Male Voice Quartet, (a) "Rio Grande"; (b) "Billy Boy" (H.M.V. Record B2646).
 8.56: Contralto solo—Miss Bessie Le King, "In the Heart of the Hills" (Lee).
 9.0: Weather forecast.
 9.2: Vaudeville—Snappy Three, (a) "Good Little, Bad Little, You" (Green); (b) "Side by Side" (Woods).
 9.12: Trio—Auckland Trio, "Cavalleria Rusticana" (Mascagni).
 9.22: Novelty—Bohemian Duo, (a) "Hoki Hoki" (Maori) (MS); (b) "Poatarau" (Maori) (MS).
 9.29: Programme of dance music.
 11.0: Close down.

2YA, WELLINGTON (420 METRES)—SATURDAY, JANUARY 5, 1929.

- 3 p.m.: Chimes of the G.P.O. clock.
 3.1: Selected gramophone items.
 4.30 and 4.55: Sports results to hand.
 5.0: Close down.
 6.0: Children's session conducted by Uncle Toby and Aunt Gwen.
 7.0: News session—market reports and sports results.
 8.0: Chimes of the G.P.O. clock.
 8.1: Overture—Orchestra, "Light Cavalry" (Suppe).
 8.11: Quartet—Melody Four, "The Old Brigade" (Trottere).
 8.15: Novelty imitations—Mr. W. Hurcomb.
 8.21: Tenor solo—Mr. S. Duncan, "Believe Me if All Those Endearing Young Charms" (Traditional).
 8.25: Hawaiian selection—Queenie and David Kalli, "Hawaiian Love Song" (Parlophone Record A2507).
 8.29: Instrumental—Orchestra—Orchestra, (a) Violin solo with orchestral accompaniment, "Le Cygne" (Saint-Saens); (b) "Serenade" (Chaminade).
 8.37: Baritone solo—Mr. R. S. Allwright, "Mountain Lovers" (Squire).
 8.42: Concerted with orchestra, D'Oyly Carte Opera Co., (a) "Here We Are at the Risk of Our Lives"; (b) "Dance a Cachuca" (from "The Gondoliers" (Sullivan) (H.M.V. Record D1343).
 8.46: Instrumental—Orchestra, "Repeat number."
 8.54: Quartet—Melodie Four, "Laughing" (Abt).
 8.58: Weather forecast.
 8.59: Foxtrot—Paul Whiteman's Orchestra, "Dixie Dawn" (Trent), (H.M.V. Record EA386).
 9.3: Bass solo—Mr. W. M. Marshall, "The Pirate Bold" (Slater).
 9.7: Novelty—Orchestra, "Musical Switch" (Alford).
 9.17: Novelty imitations—Mr. W. Hurcombe.
 9.23: Concerted with orchestra—Light Opera Co., "Gems from Countess Maritza" (Smith-Kalman) (H.M.V. Record EB11).
 9.27: Tenor solo—Mr. Frank Bryant, "Fat Little Feller" (Gordon).
 9.31: Orchestral—Orchestra, "Popular Melodies" (2nd. Selection) (Sullivan).
 9.41: Quartet—Melodie Four, "Soldiers' Chorus" (from "Faust") (Gounod).
 9.46: Instrumental—Orchestra, Foxtrot Novelties.
 9.56: Dance Programme.
 11.0: Close down.

3YA, CHRISTCHURCH (306 METRES)—SATURDAY, JANUARY 5, 1929.

- 3 p.m.: Afternoon session—Selected studio items.
 4.25: Sports results.
 4.30: Close down.
 6.0: Children's hour.
 7.15: News session.
 8.0: Chimes.
 8.1: Rebroadcast of 2YA, Wellington (conditions permitting).
 10.0: Dance programme.
 11.0: God Save the King.

4YA, DUNEDIN (460 METRES)—SATURDAY, JANUARY 5, 1929.

- 7.15 p.m.: News session.
 8.0: Town Hall chimes.
 8.1: Relay of orchestral music from the Octagon Theatre Orchestra under the direction of Monsieur Henri De Rose (Mus.Bac.).
 8.11: Popular song hits—Miss Betty Roberts, (a) "Flower of the Bush" (Sharp); (b) "My Mother's Lullaby" (Sharp).
 8.18: Hawaiian selection—King's Hawaiian Players, "Hilo March" (Berger) (Columbia Record 01226).
 8.22: Humorous Scottish song—Mr. J. Patterson, "Doctor McGregor" (Fyffe).
 8.26: Humorous sketch—Miss Sheila Neilson and Mr. J. B. McConnell.
 8.36: Relay of orchestral music from the Octagon Theatre.
 8.51: Popular songs—Miss Frances Chawner, (a) "After the Dawn" (O'Hagan); (b) "Two Eyes of Grey" (McGeoch).
 8.57: Weather forecast.
 9.0: Orchestral—Royal Philharmonic Orchestra, "Blue Danube Waltz" (Columbia Record 04169).
 9.8: Popular song hit—Mr. J. B. McConnell, "Souvenirs" (Nicholls).
 9.11: Pipe organ solo with vocal chorus—Milton Charles, "Are You Happy?" (Ager) (Columbia Record 01184).
 9.15: Popular song—Miss Betty Roberts, "Hawaiian Butterfly" (Santley).
 9.19: Humorous sketch—Miss Sheila Neilson and Mr. J. B. McConnell.
 9.29: Saxophone solo—Andy Sannella, "Jack and Jill" (Sannella), (Columbia Record 01186).
 Vocal with novelty accompaniment—Ukulele Ike, "Chiquita" (Wayne) (Columbia Record 01265).
 9.37: Humorous Scottish songs—Mr. J. Paterson, (a) "Down in the Quarry" (Fyffe); (b) "Up Among the Heather" (Fyffe).
 9.45: Foxtrot with vocal chorus—Paul Whiteman's Orchestra, "C.O.N.-S.T.A.N.T.I.N.O.P.L.E." (Carlton) (Columbia Record 07002).
 9.49: Popular song hit—Miss Frances Chawner, "When It's Love-Time in Hawaii" (Heagney).
 9.51: Instrumental with vocal refrain—Clark's South Sea Islanders, "Good-bye, Hawaii" (Rories) (Columbia Record 01225).
 9.55: Popular songs—Mr. J. B. McConnell, (a) "When Day is Done" (Katscher); (b) "Just Once Again" (Donaldson).
 10.2: March—National Military Band, "El Capitan" (Sousa), (Columbia Record 01130).
 10.6: Close down.

Sunday, January 6

1YA, AUCKLAND (333 METRES)—SUNDAY, JANUARY 6, 1929.

- 3.0 p.m.: Afternoon session—selected studio items.
 4.0: Literary selection by the Announcer.
 4.8: Studio items.
 4.30: Close down.
 6.0: Children's Sunday Song Service, conducted by Uncle Leo.
 6.55: Relay of service from St. Matthew's Church—Preacher: Canon Grant Cowen, Organist: Mr. J. H. Philpot.
 8.45: Band selection—"Valse Creole" (Tschaikowsky) (Columbia Record 02677).
 8.49: Vocal duet—Hazell-Sutherland Duo, "O Divine Redeemer" (Gounod).
 8.53: Instrumental trio—"Allegro Moderato" from "Trio in B Flat" (Schubert) (Columbia Records 04138-9).
 9.5: Contralto solos—Miss Phyllis Hazell, (a) "Like as the Hart" (Allitsen); (b) "Ombra Mai Fu" (Handel).
 9.12: Cello solo—"To a Wild Rose" (Macdowell) (Columbia Record 03591).
 9.15: Baritone solos—Mr. Frank Sutherland, (a) "The Toilers" (Piccolomini), (b) "The Last Call" (Sanderson).
 9.23: Orchestral—"Bridal Chorus" (from "Lohengrin" (Wagner) (Columbia Record 02663).
 9.27: Vocal duet—Hazell-Sutherland Duo, "The Day is Done" (Lohr).
 9.31: Close down.

2YA, WELLINGTON (420 METRES)—SUNDAY, JANUARY 6, 1929.

- 3 p.m.: Afternoon session.
 4.30: Close down.
 6.0: Children's Sunday service conducted by Uncle George.
 7.0: Relay of service from Trinity Methodist Church, Wellington South (Preacher, Rev. T. W. Vealie; organist, Miss Evelyn Thawley, L.A.B.; choirmaster, Mr. Eales).
 8.15 (approx.): Studio concert.
 Overture—New Queen's Hall Light Orchestra, "Hansel and Gretel" (Humperdinck) (Columbia Record 41655).
 Tenor solo—Mr. James Osborne, "My Dreams" (Tosti).
 Viola solo—Lionel Tertis, "Fugue in D" (Tartini-Kreisler) (Columbia Record 04048).
 Choral—Choir of St. George's Chapel, Windsor, "Magnificat in D Minor" (Walmisley) (Columbia Record 9174).
 Contralto solo—Mrs. Phyllis Ramsey, "The Lord is My Light" (Allitsen).
 Pianoforte solo—Mark Hambourg, "Caprice Chinois" (Scott) (H.M.V. Record E13).
 Bass solo—Marcel Journet, "La Calumnia" ("Barber of Seville"—Rossini) (H.M.V. Record DB921).
 Violin, harp, and flute trio, "At King's Lake" (Gung'l) (Columbia Record 127).

Tenor solo—Mr. James Osborne, "A May Morning" (Sanderson).
Instrumental sextet—Victor Olof Sextet, "To a Water-Lily" (MacDowell) (H.M.V. Record B2690).
Quartet—English Singers, "Though Amaryllis Dance" (Byrd) (H.M.V. Record E292).
Contralto solo—Mrs. Phyllis Ramsey, "How Lovely Are Thy Dwellings" (Liddle).
March—Coldstream Guards Band, "Marche Militaire" (Gounod) (H.M.V. Record C1176).
Close down.

3YA, CHRISTCHURCH (306 METRES)—SUNDAY, JANUARY 6, 1929.

8 p.m.: Gramophone recital of selected items.
4.30: Close down.
5.30: Children's song service.
6.30: Relay of service from Edgeware Road Methodist Church (Preacher, Rev. Samuel J. Werren; organist, Miss Stella Osborn; choirmaster, Mr. C. James).
7.45 (approx.): After-church studio concert.
Orchestral—"Symphony in G Minor" (Mozart) (First Movement, Allegro Molto) (H.M.V. Record C1347).
7.53: Mezzo-contralto solos—Miss Kathleen Johns. (a) "Still as the Night" (Bohm), (b) "Smiling Through" (Penn).
7.59: Orchestral—Royal Opera Orchestra, "Sylvia Ballet" (Delibes): (a) "The Huntress," (b) "Intermezzo and Valse Lente" (H.M.V. Record C1417).
8.7: Baritone solo—Mr. Cyril Rishworth, "When God Gave You to Me" (Nicholls).
8.11: Male choruses—Parlophone Melody Co., "Convivial Songs" (Parlophone Record A2511).
8.15: Mezzo-contralto solo—Miss Kathleen Johns, "My Dear Soul" (Sanderson).
8.19: Violin solo—Renee Chemet, "Serenade" (Toselli) (H.M.V. Record DA955).
8.23: Baritone solos—Mr. Cyril Rishworth. (a) "Where the Abana Flows" (from "A Lover in Damascus"); (b) "Kashmiri Song" (from "Four Indian Love Lyrics" (Woodforde-Finden); (c) "The Garden of Kama" (Woodforde-Finden).
8.32: Grand organ solo—Marcel Dupre, "Prelude and Fugue in G Major" (Bach) (H.M.V. Record D1402).
8.40: Instrumental and vocal items will follow until 9.30.
9.30: Close down.

4YA, DUNEDIN (463 METRES)—SUNDAY JANUARY 6, 1929.

5.30: Children's song service conducted by Big Brother Bill.
6.30: Relay of service from St. Andrew Street Church of Christ.
8.0: Relay from St. Kilda of concert by the St. Kilda Band.
9.15: Close down.

Care of Accumulators

APPENDED are a few notes on the care of the accumulator, for, if an accumulator is left in a bad condition, it will be in a much worse condition when it is to be used again.

IF you are fortunate enough to know of a really good service station, your accumulator should be automatically kept in condition by this charging station. The actual condition of the whole battery and its separate cells should be checked there by experts, who know just how to cure any little troubles that may arise. Particularly should this be done if the owner contemplates having the battery for any time.

The symptoms by which the condition of a cell are tested are the voltage and the specific gravity. The voltage is tested by means of a voltmeter, before, during, and after the charging, and also while the accumulator is discharging.

Similarly, the specific gravity of the electrolyte is tested during the various stages of charging and discharging, and if the tests are scrupulously carried out, the slightest disorder in the cells will be detected at its very beginning.

The chief points watched in a charging station, apart from the rates of charge, etc., are:

(a) "Topping up" the cells (distilled water is used to make up for any losses

of the acid solution due to evaporation).

(b) Scrupulous cleanliness of the connections is essential. The connecting bars should be tight and well fitting, the terminals coated with petroleum jelly to prevent them being attacked by the acid, and in general the battery should be kept clean, cool, and dry.

(c) The little filling plugs should always be placed back in position after the electrolyte has been tested or renewed, and it is important that the small holes in the plugs (arranged for allowing gases, etc., to escape), should not become blocked up.

About every twelve months, the old electrolyte should be poured away and replaced by new electrolyte of the correct specific gravity.

New Year Sports

All Features Covered

THE New Year season will be a very busy time for the stations. Wherever there are sports meetings, they will be covered. At all stations, special studio programmes have been arranged for the evenings of both December 31 and January 1. On the occasion of New Year's Eve, the broadcasters will be busy till well after midnight. A reference to the programmes of each station will show the nature of entertainment proposed.

Our Mail Bag

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

Suggestions.

RE letter from Achilles and your invitation for suggestions for characteristic sounds for broadcasting stations. How about a wind machine for 2YA; a noise like a harbour for 1YA; and the pipes or the snip of a shut purse for bonny wee 4YA?—**Christchurch Bells.**

The Singing Ladies.

I DESIRE to congratulate 2YA on the completely delightful programme rendered on Monday evening (December 10) by the ladies of the Singing Circle of the Pioneer Club. The glees were beautifully sung and very much enjoyed by a party of musical guests present at my home. Would it be too much to ask the circle to repeat the concert, or come on the air again with a similar type of programme?—**"Musicus."**

Constructive Ideas.

THERE are two classes of writers to your mailbag. One says, "Everything in the programmes is right and dare anyone say otherwise on penalty of . . ." etc. The other class generally finds all wrong. Now I propose to strike another note. I don't think all is right and certainly all is not wrong, but there is another point of view. With the exception of special relays all the programmes of 2YA from the beginning have been built on one model: Overture, soprano solo, instrumental solo, contralto solo, and so on, repeated again and again.

I entirely agree with G. Fraser, Ohura (December 7) in what he says re light entertainment and Schubert and Co. Now what I would suggest is that 2YA omit some of the Schubert, Verdi, etc., items and occasionally take

a leaf out of 1 and 3YA's books and give us half an hour of connected light music such as we are getting to-night in the Greek Slave (but not as that particular one is being given—broken up by other items). There must be several of these light operas or even cantatas suitable for the purpose, and why not utilise that splendid orchestra to accompany? If this could be done either Monday or Tuesday night instead of the present style it would be a great improvement. It may be said, "Why not tune in these items from the station that is giving them?" The answer is that in this district both 1YA and 3YA fade badly, and items that would be very enjoyable are spoilt for us. If it were not for this, one would thoroughly enjoy, say, the Radiolians and the Russels at 3YA.

Another suggestion re the orchestra. One would like soloists to play accompanied by the orchestra, not as is often the case, the orchestra accompanied by the soloist. This applies especially to the cornet, flute, and clarinet. The violin and cello solos are almost always clear, and not overpowered by the others.

Now for a word of praise. More than 90 per cent. of the items are good, some very good, whilst such relays as the recent Scottish night, the Wellington Orchestral Society's concert, and especially the Wanganui concert were excellent. In fact, it would take far too much space to mention even a tithe of the good things. In conclusion, I suggest that if 2YA can see its way clear to give us an occasional half hour of connected solos, duets, choruses, etc., accompanied by the orchestra, of the class mentioned above they will add yet another to the good things provided.—**"Haweraite."**

Picnics by Train

A Popular Service

THE popularity of the train for the conveyance of picnic parties can be gauged from a perusal of the latest figures available. During the quarter ended March, 1928, 172,336 picnickers were carried by ordinary and special trains throughout the Dominion. Notwithstanding the exceptionally cheap rates, the revenue from this source amounted to £19,119 1s. 7d.

Undoubtedly the principal reasons for the preference accorded the "Picnic Train" is the low cost and the convenient service given. Picnic organisations find it very convenient to make use of the system which permits of the inclusion in the fare of additional moneys for disbursement in prizes, fruit, sweets, etc.

In the past, schools, friendly societies, trades unions and other organised bodies were restricted to one cheap fare excursion annually. This restriction has now been removed, and the resultant increase in business has fully justified the extension of the privilege.

Multi-Wave Relays

BEFORE the end of the year it is likely that some interesting relays of American broadcasting concerts will take place in Europe. It is likely that the short-wave transmissions from America will be picked up in England on five different receivers.

The transmissions will also be made on five different wave-lengths from five different stations. At Keston (England) the five receivers, each tuned to one of the five transmitting wave-lengths, will be able to make up for any losses in fading, etc., which might occur on one specific wave-length.

The united production of the reception by the five receivers will then be fed into amplifiers, passed on to Savoy Hill, and then rebroadcast to British listeners. Technically, this method is considered the best way to avoid the fading of signals, which have marred many long-distance relay broadcasts.

THE plaintiff in a recent case in a London police court said: "He swore terribly at me in a broadcasting voice."

Hawke's Bay Notes

THE action of the Broadcasting Company in presenting mid-day music during the past couple of weeks, has been greatly appreciated up this way, and it has been quite a pleasure to have lunch amidst good music. In fact it would not be surprising to find the company bombarded with requests to continue on these lines. At any rate, the move has been a great boost for the proposed dinner music sessions.

With the very uncertain weather which has been experienced recently, reception conditions have not been quite up to the mark, but all listeners are looking forward to a good time during the Christmas week, and despite the conditions, listeners would not be without their receivers for a mint of money.

THE Hawke's Bay Radio Society had another very enthusiastic meeting last week, and once more proved that they are a crowd of live-wire enthusiasts. A big portion of the evening was taken up with a discussion concerning the proposal to establish a local broadcast station, the main bone of contention being whether the society should carry on with the proposal or whether it should be left to a local firm which is contemplating the erection of a station. It was finally decided to refer the whole matter to a special committee who will confer with the local dealers and then report back to a general meeting.

With the idea of fostering the social position of the society, it was decided to hold a picnic on January 27, and this will probably be followed by a series of ladies' nights. If the ladies can be induced to take an interest in the society, there is no reason why it should not boom and boom big.

ANOTHER forward move last week was the holding of a Christmas party for the kiddies of Radioland. A big Christmas tree, well laden with toys was installed and through a microphone, Father Christmas himself greeted the youngsters. Then he appeared to dispense the toys, whilst the ladies brought out the good things to eat. It was a great treat for the kiddies, but next year, when the interest of the ladies has been secured, it can be made into a really big function.

THE official opening of the Hastings Hospital radio equipment takes place on December 28, at 7.30 p.m.

The test transmission of the new station erected by Standard Telephones, was not received up this way very satisfactorily. No one expected that it would be, for there are times when 2YA, with its 5000-watt plant,

Double-grid Valves Queries from Correspondents

PRIOR to and following our special issue, in which a single stage amplifier using double grid valves was described, we have had questions regarding this type of valve.

These are not to be compared with the pentode style of valve, in which there are three grids and which requires a high plate voltage, though it is connected in the set in the same manner. The valve is primarily intended to give maximum amplification at low voltage pressure, and is thus admirably suited to single stage amplifiers which are to be worked solely from batteries. However, the following questions and answers show their wider application:—

1. "Can double grid valves be successfully used in an ordinary circuit, such as a neutrodyne, without alterations to the wiring, providing the amplification factor, etc., are suitable?"

Yes, circuits using two or more of these valves have already been described, and according to another letter give great results.

2. "Can double grid valves be used in a push-pull amplifier, and, if so, how much volume will such an arrangement carry without distortion?"

They are not suitable valves for last stage owing to their low undistorted output. Their special application has been mentioned above.

3. "Could you please publish the characteristics of the different makes of these valves?"

As far as can be ascertained Philips 441 is the only suitable double-grid obtainable in New Zealand. Following are its characteristics:

Filament voltage	4.0
Filament current	0.08
Anode voltage	2-20
Auxiliary grid voltage	2-20
Total emission	20
Amplification factor	4.5
Mutual conductance (Slope)	1.0
Internal resistance	4500
Negative grid bias	4.5
Normal anode current, M.A.	0.9
Anode grid capacity	2.0

4. "What is the total B current consumed by one of these valves?"—A. C. SIME (Otago).

See above table—Normal anode current.

is not very loud, so one could hardly expect a 50-watt station to come through with any strength.

THE next meeting of the Radio Society has been fixed for January 29. As there will be a further discussion regarding the broadcast station at this meeting, it is hoped there will be a full attendance.

P. R. SIMSON (Auckland) writes: "I have an N.Z.R. circuit set with two audio stages, using all double grid valves with the following voltages: Set. 4½ B. first and 16½ B. second and 18 B. The A battery is a 2-volt accum. B battery is a 22½ block. The following stations have been logged: 1YA, 2ZB, 1ZQ, 2BL, 2FC, 3LO, 4QG, 2YA, 26B, 3YA, 3ZC, 2KY on either speaker or 'phones. I am always able to get music from one of these stations, and as the set discharges an accumulator in eight weeks and a B battery (I don't know how long, but it has dropped only 3v. in five months), I think "local station" grumblers should get a similar set and be independent of local. I have also tried a gramophone pick-up, and whilst the volume was there the bass was missing. I am at present building a four-valve double-grid set with many innovations for economy.

Can you tell me any method of getting the bass from a pick-up without increasing the plate voltage?

The reproduction of bass notes require more power from the last valve than do the treble notes, consequently to do the bass frequencies justice a real power-valve with ample voltage on the plate must be used. Letrodes have not sufficient power output to efficiently handle bass notes in a last stage amplifier.

Improving the Condenser

NEARLY all modern condensers have positive contacts, usually of the "pig-tail" kind between the spindle and the terminal or soldering tag to which the connection for the moving vane is made. The resistance of an old condenser may be reduced by making a

pig-tail contact from a thin strip of copper foil coiled into a spiral. The inner end is soldered to the spindle and the outer to the terminal or tag. Even the best of condensers ceases to be as efficient as it should when dust is allowed to collect between the vanes. Should the dust particles happen to be non-conductors dielectric material is introduced into the strongest portion of the electrostatic field, whilst, if, as is usually the case, they are, at any rate, partial conductors, the condenser is more or less short-circuited. The net effect of using a dirty condenser in parallel with a coil in a tuned circuit is much the same as that of using a coil, a clean condenser, and a high resistance in parallel: tuning is flattened and signal strength suffers.

Mush on One Note of Speaker

I HAVE a high-grade cone speaker, which has a mushy rattle on one particular note about an octave below middle C and I cannot get it out. On all other notes it is very good and it has a good range. This particular note always goes mush and there is a distinct rattle.—DIOGENES (Cromwell).

The resonance here is more likely to be the result of a fault in the amplifier as the speakers mentioned are on account of their using the balanced armature principle, free from all resonance effect.

It would be advisable to test the output filter with a pair of high-grade phones or with another speaker.

Should the speaker be defective the Wellington branch of the manufacturers would no doubt be willing to assist.

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ALTHOUGH A and B battery eliminators are becoming increasingly popular among radio owners, a large number are still using batteries as a source of filament and B-supply and will continue to do so, especially where suitable power lines are not available. Every set owner using batteries should know not only how to take care of and keep them in good operating condition, but also the proper methods of connecting them to the set to obtain the best results.

Battery Containers.

CORRODED terminals, acid eaten wire and wrong connections are a common source of trouble that may easily be avoided. Batteries untidily placed on the floor, connected by long straggling wires to the set, are not only disagreeable to the eye, but also a certain source of trouble. Such an installation may be satisfactory for temporary use when testing, but should never be permanent.

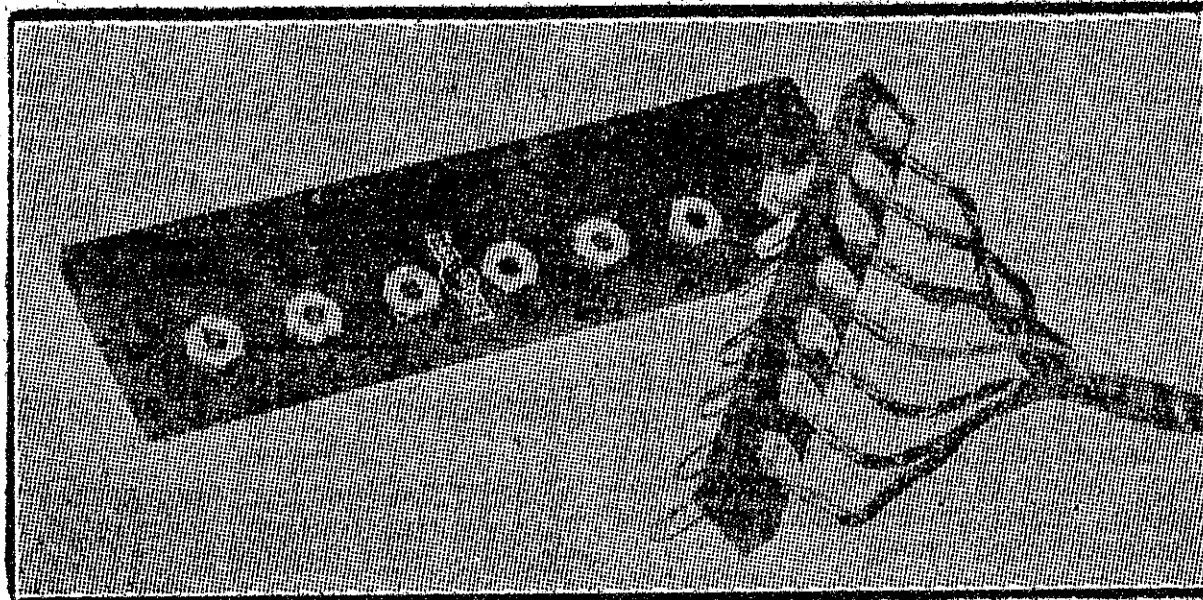
Instead of separate leads, the use of multi-wire cables, is advised and the batteries and charger should be kept out of the way, and out of light where possible. If a radio console or table with battery compartment is not available, a neat closed box of suitable size, in which air holes are drilled, may be used.

ONE radio owner, known to the writer, has utilised a wash-stand with a lower compartment provided with folding doors. These pieces of furniture are rapidly being discarded and one should be procurable at an auction sale for quite a small sum. If stained to match the cabinet a very fine piece of furniture can be made. Another adaptation is the familiar kerosene box, unfortunately going out of fashion. With a few of these, a very

neat battery box can be constructed. When small sets are made a cabinet can be constructed to include batteries.

Binding Posts.

ATTENTION should be given to binding posts. Loose posts and poor terminal connections cause crackling noises, and high resistance contacts,



with which no radio receiver can possibly give good results. The posts may have loosened by vibration or may not have been turned down tightly when the receiver was first installed.

All wire attached to binding posts should be perfectly clean. If rubber covered wire is to be used, clear away the insulation by slicing with a sharp knife, away from the body and slantwise down the wire toward the end.

Other methods will lead to a wire being severed, or injured and the knife seriously blunted.

Having removed the rubber, scrape the wire, or individual wires if stranded, clear of any trace of insulation. If the wire is tinned it is inadvisable to scrape off the tin as it saves the wire from corrosion. Stranded wire

should be twisted so that there are no stray wires. If this is now coated with solder a perfect terminal can be assured. Silk or cotton covered wire should be tied so as to prevent fraying.

The wire should be bent round the post in the same direction that the head turns, that is clockwise. This tends to keep the wire securely under the head. Some binding posts have a

hole drilled in the shank, through which the wire is inserted, whereupon the lead is screwed down tightly. In those cases where no hole is drilled the enterprising amateur can with the aid of a 5-64in. or 3-32in. twist drill attain his ends.

The wire on the innermost end of the terminal should be attached by means of a lug soldered to the wire and attached to the terminal by means of a small nut. Two would be better. A good terminal is provided with a slot on this end, so that a good connection can be made.

A Battery Plug.

A GOOD product is to be seen on the market for a battery connection. It consists of a socket and plug. The plug has several prongs which fit into the socket so as to form a firm connection, this allows of all batteries being instantly disconnected. There is no fear of shorting by making a wrong connection in connecting them up again.

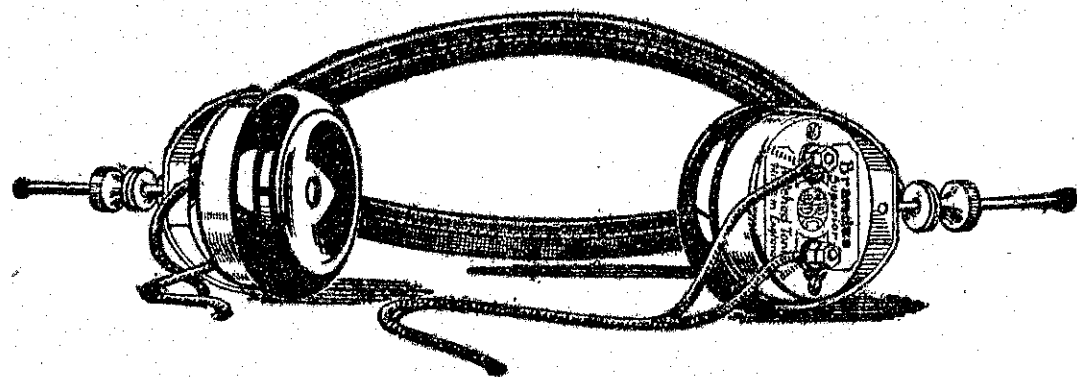
There are other means of achieving this end. One or two valve bases and valve sockets may be pressed into service.

Take a broken or burnt out valve, which unhappily, every set owner must possess, clear away the glass and sweat out the four wires from the prong. Taking four insulated strands of the cable, clear away just enough insulation to allow the end to be pushed well down the prong. If the cavity is not wide enough to take the wire it may be easily drilled out. If carefully made a good battery connection can be constructed for a very few shillings.

There is another very efficient method. Take a narrow strip of bakelite or ebonite and drill to take sufficient plugs, to take leads from all the batteries. Drill another piece of bakelite to take the sockets. If these are

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OBTAINABLE FROM ALL RADIO DEALERS.

IN the issue of the "Radio Record" for November 28, a trickle-charger for both A and B batteries was described. It is quite an efficient device. It suffers only from one disadvantage, namely, that to put batteries in charge requires their removal from the set, which is earthed, and this is a messy business—and one slip with the B battery wires may cost the radio fan a new set of valves, and anyone who has had the misfortune to burn out a set of six or eight knows that this is a costly business. This addition is in the form of a switch which has three positions, viz., batteries disconnected, batteries to set, and batteries to charger—no wires to remove, or connections to change. The "off" position is an advantage, especially where 135 volts or upwards is used, for when only the filament switch is turned off, and the B's left connected, there is a strain on the insulation of the set; and, also, this practice leads to electrolysis, at joints especially.

To make this switch, little skill is required, and few tools; in fact, any constructor who has made the charger can build it in a couple of hours. Of course, it can be applied to charging devices other than the one mentioned in the article.

The list of material is as follows:—

- 1 piece of insulating panel 3-16in. thick or over, 4in. x 3in.
- 1 piece of insulating panel, ebonite, etc., 4in. v. 4in.
- 1 piece hard brass, 1/2in. x 12in. x 3-64in.
- 1 piece hard brass, 3/4in. v. 3/4in. x 3-64in.
- 19 5-32in. bolts and nuts 1in. long.
- 5 1-8in. bolts and nuts 1/2in. long.
- 14 5-32in. nuts.

Square up the 4 x 4 panel, file the edges up true and slightly level that side which is to be the face, all round. Now on the back of the panel draw two centre lines at right angles, and on the horizontal one mark two points each side of the vertical line 1/2in. apart. Parallel to the horizontal line, draw two more lines 1 1-8in. either side of it. Mark these the same as the centre horizontal with two marks each side 1/2

somewhat irregularly spaced the plugs will fit one way only and there can be no danger of a short circuit.

The photograph accompanying the article illustrates the idea. The strip holding the leads and plugs can be withdrawn boldly from the sockets when the set is finished with, and the set completely isolated, and by using good quality ebonite for the strip, there is no likelihood of any leakage taking place between the respective plugs. The idea works admirably in practice.

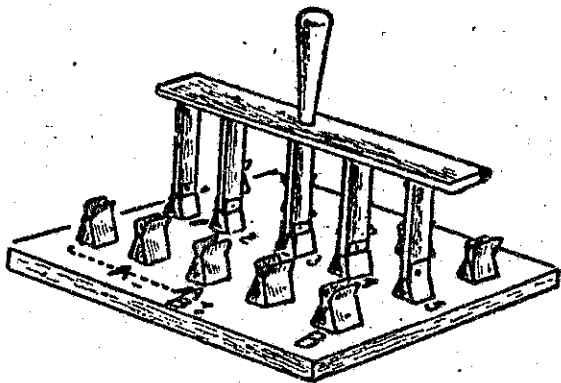
An Addition to the Trickle Charger

Contributed by W. Winten

of an inch. Each of these marks may be drilled 5-32, excepting that one blank is left on the top line, the second from the right, looking at the back. Four small holes may be drilled to hold the switch and the charger, or wherever it is mounted.

From the larger piece of hard brass the switch contacts are made. This piece is cut into strips 1 1/2 inches long by 1/2 inch wide, a 5-32 hole is drilled through the centre, a bolt inserted, and then the piece is bent into a U-shape with the tips close together.

Fourteen pieces thus are required, but five of them require a little further treatment. These five are for the centre



row and are the contacts that the switch blades pivot on. They have an 1-8 inch hole drilled through the contact faces to take the blades. The blades are made from the second piece of brass and are 1/2 inch wide by 2 inches long. Five are required. Through one end an 1-8 inch hole is drilled, just slightly back, and the corners this end are rounded off.

Now from five of the 5-32 bolts cut pieces 1/2 inch long and slit them with the hacksaw for 3-16 of their length. Solder the switch blades in this slot, the end with the hole in, of course, not being soldered.

Insert one blade in each centre contact and bolt up stiffly with the 1-8 inch bolts, filing any projecting length away. Now mount this much on the panel together with all the other contacts. The piece of 1/2 inch panel is to form the link bar of the switch, and is drilled to take the short pieces of screws on the switch blades. A nut on each projecting thread holds it on.

A small handle may be mounted on the centre blade if desired.

The extra nuts are to make the connections with the leads to the batteries at the back. If your B bat-

tery has more than three leads, an extra blade will be required on the switch, but the method of connecting it will be obvious as the only two contacts required for the B battery on the charge side are B+ and B-. The diagram will give the constructor an idea of the finished switch. If a C battery is used it must be connected with the C+ terminal joined to the A- contact on the "to set" side of the switch, and not to the A- terminal on the battery.

To charge the batteries is now quite a simple matter. The switch shown in circuit with the primary of the transformer in the original article may be transferred to the A- side of the

charger terminals, and the charger controlled by the plug switch on the outlet to which it is attached. This will allow the B to be boosted on its own. To charge the A battery only, remove the resistance lamp from its holder.

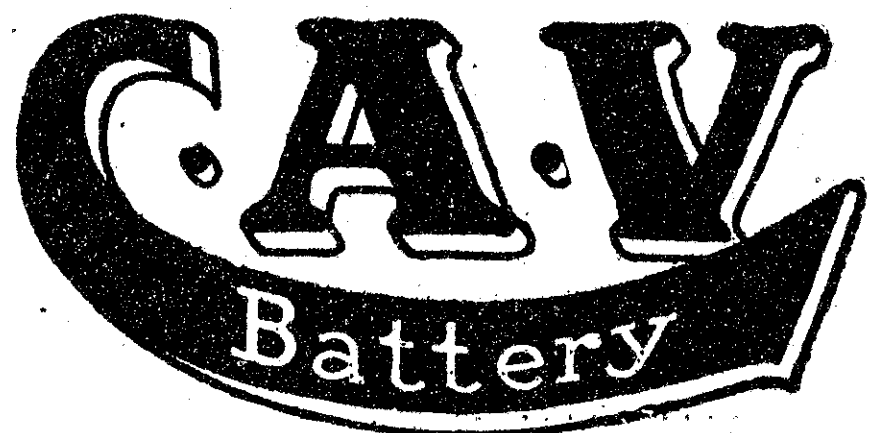
IF your loud-speaker is several years old and does not seem to be so good as formerly, it is possible that if overhauled by the makers or a firm specialising in such work it would receive a new lease of life.

IF a fault suddenly develops in your receiver, the following check should be made in the order given:—Filament battery, "B" battery, valves, loud-speaker, aerial, earth, battery connections. If you are not experienced enough to effect repairs yourself, take your receiver to a reliable firm to be repaired, otherwise you may cause some damage.

What sort of a NEW YEAR
PRESENT shall I buy the Boy?

"AH, I KNOW"

A



for his Wireless

We have all sizes, shapes and
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Batteries for
"THE MOTOR CAR"
—and other purposes,
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Our Battery Services continue throughout
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Comprising Batteries, Valves, Colvern Coil, Speaker Unit,
etc.—Everything included less Cabinet.

Write P.O. Box 654, Wellington.

L. H. WRIGHT. Radio Specialists

IN your issue of November 30, I notice the usual complaint re distortion from 2YA. Presuming that this is due to broadening of modulated wave, naturally distortion follows when received on receivers which have the inherent fault of broad tuning to powerful signals. During September, when 2YA was so terrible that radio column editors and correspondents waxed exceedingly wroth, I was listening to practically 100 per cent. distortion-free programmes night after night. The secret is the "Free Grid" circuit described in "Popular Wireless" of June 23.

This circuit allows maximum regeneration to be used without overloading detector and therefore gives a sharpness of tuning otherwise unobtainable with strong signals on regenerative set. Further, as it is a form of anode rectification, the tone is perfect at the detector, it reduces HT consumption and gives smooth reaction control. Its fault is that it reduces volume a bit

on a very efficient regenerative set, although my authority says the contrary. Any leaky grid regenerative can be altered easily and inexpensively and the details are as follow:—

Changing to the Free Grid Circuit.

REMOVE filament end of secondary coil from valve socket terminal, insert a .001 or .0015 fixed condenser between coil end and filament negative terminal on valve socket, take out grid leak, short grid condenser and the alteration is complete.

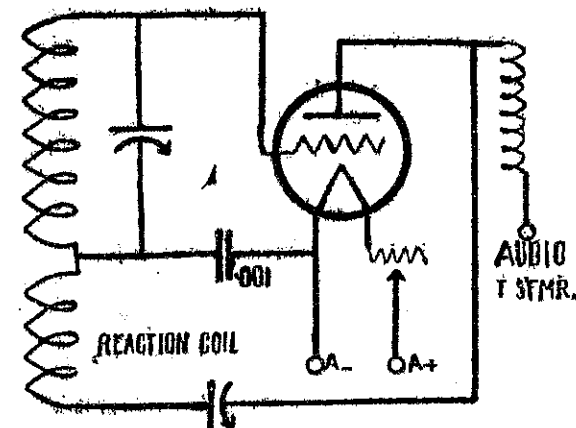
It may be found an advantage to increase Det B voltage, "Popular Wire-

The "Free Grid One"

Claimed to Eliminate Distortion

(By "Free Grid.")

less" stating that this voltage may sometimes be increased as high as 100 volts without causing overlap in reaction. My own set will not take more than the usual voltage.



'FREE GRID ONE.'

The Free Grid is said to work equally well with magnetic (movable tickler), Reinartz or throttle control regeneration. The filament end of this latter however must be taken to A+ and this necessi-

tates fitting a leak holder if leak had previously been placed across grid condenser. The .001 in filament end of coil is not shorted or removed.

Its presence in circuit when changing back to leaky grid does not affect the set if alteration has been made to wiring of grid leak, and further, it will be noticed that it serves as a blocking condenser to keep Plate HT out of filament should reaction condenser become accidentally shorted.

Claims Made.

THERE is one point to remember and that is that all stations will have to be relogged, the Free Grid making a considerable difference in condenser readings.

For listeners residing in YA cities and desiring practically perfect reproduction, the Free Grid will give it provided their audio stages and speaker are what they should be.

Short-wave enthusiasts whose sets have that terrible affliction "threshold howling," will find the Free Grid silent and smooth in action, although volume will probably suffer more so than on the broadcast band.

Readers are advised to leave grid condenser and leak holder in position, as they can revert to the old method at any time by simply removing the short on condenser and replacing leak.

RADIO DIRECTORY

What to Buy and Where

CITIES

ALTONA & HAMMARLUND.	Johns, Ltd.
ROBERTS SETS.	Chancery Street, Auckland.
ATWATER-KENT RADIO	Frank Wiseman, Ltd.
	170-172 Queen Street, Auckland.
BREMER-TULLY RADIO	Superadio, Ltd.,
	147 Queen Street, Auckland.
BURGESS RADIO BATTERIES,	All Radio Dealers.
CROSLEY RADIO	Abel, Smeeton, Ltd.,
	27-29 Customs St. East, Auckland.
FERRANTI RADIO COM- PONENTS	A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.
GREBE RADIO	Howie's,
	Dilworth Building, Custom st., Auckland.
MULLARD VALVES	All Radio Dealers.
PREST-O-LITE. Car and Radio Battery Service	L. J. Purdie & Co., Ltd. 97 Dixon Street, Wellington.
RADIOLA RECEIVERS and Expert Radiola Service.	Farmers' Trading Co., Ltd., Hobson Street, Auckland.
RADIOTRONS AND MARCONI VALVES	All Radio Dealers.
T.C.C. CONDENSERS	A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers.

COUNTRY TOWNS

ANCHORADIO, BREMER- TULLY, RADIOLA, BROWN- ING-DRAKE, AND AT- WATER-KENT RADIO	Radio House, Hamilton. G. S. Anchor, Manager.
GREBE, ROGERS, CROSLEY, RADIOLA AND KING SERVICE	E. Dixon and Co., Ltd., Hawera.
SIEMENS BATTERIES, RAD- IOLA DEALER AND SERVICE	G. C. Carrad. 140 The Avenue, Wanganui.
PHILIPS VALVES AND APPARATUS	All Good Radio Dealers.

The "Rotorua" Portable

Operating Hints

A MISTAKE was made in the number of turns mentioned for the construction of the frame aerial. It was stated that 20 turns centre tapped should be put on. This should have read 10 turns centre tapped and spaced $\frac{1}{4}$ in.

The Speaker Unit.

IN a number of speaker units the magnet projects about 3-8 in. over the front, thus preventing it being screwed directly on the baffle. If a piece of wood 8 in. square and $\frac{1}{4}$ in. thick is fastened at the back of the silk behind the speaker quill, and a hole cut of sufficient size to allow the flange to be screwed on, the projecting magnet will have room between the cone and the silk. If the constructor has a speaker unit that will not screw directly to the front baffle he will understand what is meant.

B Detector Voltage.

AS the detector valve is fed through a resistance in its plate lead, the detector B voltage will have to be slightly more than with the usual transformer coupled detector. As much as 67½ volts may be required to get the detector to oscillate nicely. Always give as much grid bias to the last valve as possible, as this decreases the drain on the small B batteries.

Working from Car Accumulator.

IF the constructor is touring the country in a car, the filament current can be quite easily obtained from the car battery, instead of using dry cells. The valves will, however,

have to be of the six-volt type. Lead the filament wires to two terminals on the front panel, and fasten to these a length of twin flex, on the end of which is attached an adaptor for plugging into the dash or dome light socket of the car. If this method is used, try the adaptor both ways round to determine whether the A battery is connected correctly. No result, or distorted music, will occur if the A battery is connected wrongly. Some cars have the dash light in series with the tail or rear light, in which case this plug is unsuitable and the dome light will have to be brought into use.

Results Obtained.

A FEW results obtained by "Pendote" may be of interest to constructors. Using the outside aerial in a position twelve miles from Wellington, all the New Zealand and five Australian stations tuned in on the speaker. Using the frame above, 2YA is loud gramophone strength anywhere, whether in an iron shed or on the beach. 3YA, 175 miles distant, good 'phone strength. 1YA, 400 miles, just audible.

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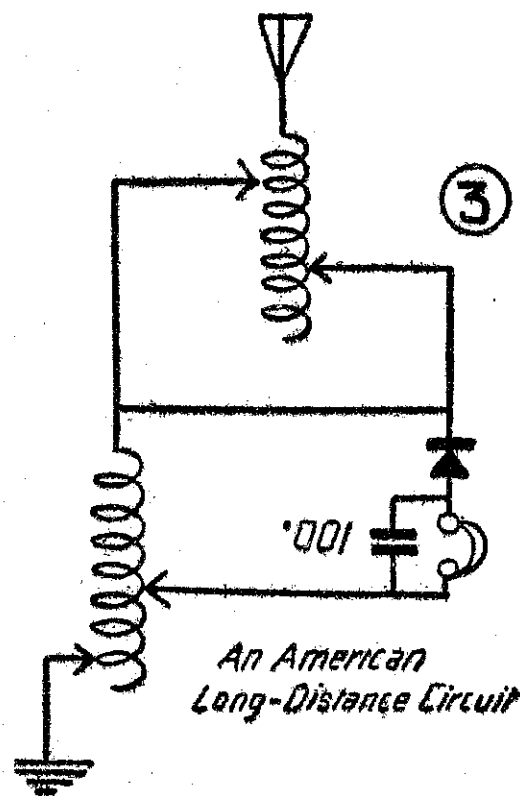
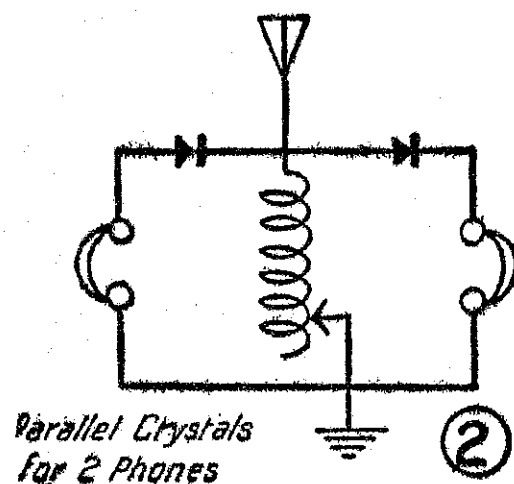
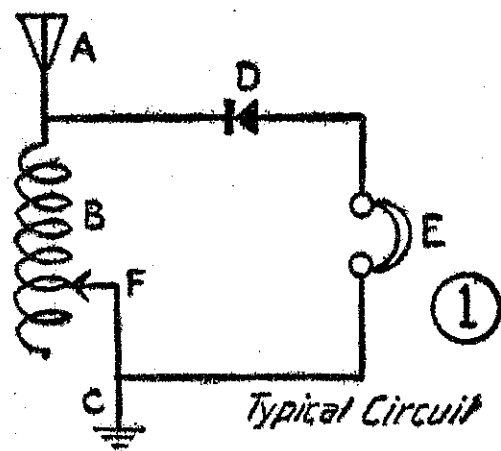
WELLINGTON — PALMERSTON

Types of Receivers.

DURING the Christmas holidays, now with us, there will be many, especially among the younger folk, who will set about constructing for themselves simple crystal sets. That is where most enthusiasts start, and a better starting place could not be had.

Those who missed our special crystal issue would be advised to obtain a copy now. There are still a very few left.

Following are three circuits showing the fundamental arrangement of the components. These circuits are the most simple yet give splendid results.



The Simplest Circuit.

THE simplest possible circuit is shown in diagram No. 1, the circuit used in all crystal outfits, but which is sometimes slightly modified by small additions such as condensers, variometers, etc. There are three ways of tuning the aerial coil that may be adopted. The first, simplest and least costly is that shown in the diagram whereby a slider, F, is arranged to move along the coil and make contact with the wires, a small amount of insulation being scraped off each to present a clean metallic surface in the track of the slider. This is theoretically a good method.

In diagram (1) A is the aerial, B the inductance or tuning-coil, which is

conveniently about 70 or 75 turns of No. 20's enamelled s.w.g. wire space-wound on a 3in. diameter former which is afterwards removed, the wires being held together by celluloid strips to which they are cemented. The wires may, if double cotton covered, be wound on to a former without the usual piece of string to separate one turn from the next. If the former is well shellacked such a winding could be left on it, all that is necessary being to cement the turns in position with good glue.

C is the earth connection to either a water-pipe or to a neutral plate or tin sunk in the ground five or six feet deep. D is the crystal detector, which may be of any kind, permanent carborundum, Semi-permanent perikon or a loose cat's-whisker and crystal, which latter give excellent results, especially for long distance, but necessitate much fiddling about and loss of reception at times.

E represents the pair or two or three pairs of headphones, but unless fairly near to a broadcast station each pair of 'phones added further weakens the volume of reception. 'Phones can be taken a great distance from the set providing the wire is well insulated and fairly thick.

Parallel Crystals.

IN diagram 2 we have the same circuit, but the crystal and 'phones portion is duplicated on the opposite side. This arrangement necessitating an extra crystal, gives in two pairs of 'phones volume equal to that of one pair with the single crystal, and with two pairs each side the four 'phones would get the same volume as two with a single crystal.

The reason for this is that the alternate waves not utilised by the first crystal, instead of being suppressed or wasted, are utilised by the second crystal, so that the circuit is then a full-wave rectifier. The connecting of the crystals is therefore important, and if the crystal side of one is connected to the aerial, then the cat's-whisker of the other is connected to it. If the connections to one pair of headphones are altered so that one ear-piece is connected respectively to each crystal, then double volume is obtained. "Pentode" has developed this idea and produced his full-wave crystal set.

An American Circuit.

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

Obtaining Selectivity.

SELECTIVITY with New Zealand operators cannot be much more

than a term, when applied to crystal sets. The reason for this is that the powerful stations are so far removed that it is extraordinary to get beyond the local on a crystal.

Selectivity is gained by the employment of loose-coupling between the aerial coil and a separate secondary coil, which is not directly connected to the aerial circuit, but is placed close to the aerial tuning coil, in such a way that the distance between the two coils can be varied.

The energy rectified by the crystal is that transferred across the space between the two coils, and it will be found, therefore, that this distance is important, and slight modifications will often eliminate undesired signals but will leave the broadcasting quite clear.

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

Another method is to wrap the primary round the secondary, but separated from it by an insulator—greased paper.

There are innumerable variations of crystal circuits that are worth a trial, and some experimenters will find a particular one that gives them best results, whilst others, differently located,

ed, will find success with an entirely different hook-up.

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

A Humming Noise in 'Phones.

SOME crystal listeners whose homes are connected to an electric supply may find that there is a slight continued 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 should be directly connected to earth.

Altering the aerial to make it at right angles to the power lines is often effective.

WHEN it is required to work a loud-speaker at some distance from the receiver, a special output circuit should be used to disconnect its leads from the high-tension battery.



**Give a
RADIO.**

The IDEAL Christmas Gift

1 B.B.C. Crystal Set, 1 Pair Brandes Headphones, 1 Coil Aerial Wire and License to operate till March 31, 1929.

Everything Complete, **37/-** Post Free. Get in Early.

—THE—
RADIO PEOPLE **F. J. W. FEAR & CO.**
63 WILLIS ST., WELLINGTON. 'Phone 41-446

Notes and Comments

By "Switch"

A WELLINGTON listener complained to "Switch" the other day that although he was using a high-class crystal set with a two-stage amplifier, he was unable to get really loud reception of 2YA Wellington. The complainant was subjected to cross-examination regarding his outfit, and it was gathered that he was using only 60 volts B battery on his last valve. He was advised to increase his B battery to 90 volts, and on the following day reported having taken the advice, and was well pleased with the marked increase in volume.

"WHICH is the best circuit for embodying in a three-valve set?" was the subject of an argument between two local fans a few days ago. "Switch" was requested to give an opinion, and he posted the following reply: "Providing that correct parts are used and the constructional data is strictly adhered to, the Browning-Drake circuit would prove to be the most efficient three-valve set against all competitors."

A COUNTRY visitor informed "Switch" that he gets a certain amount of fading in reception of each of the New Zealand stations' transmission. Fading is so far incurable, being due to factors the most important of which is up till now beyond the control of radio engineers. The most widely accepted theory is that there are two waves—one through the earth and the other through the ether—radiated by a broadcast station, and that as these two waves occasionally get "out of phase" they conflict with each other and suppress their respective energy. Then there are more ob-

A FRIEND who has just returned from the Wairarapa declares that 2YA's wave is so broad that it can be heard "all over the dials." It transpired that he had been listening in on three Browning-Drake circuit sets at different listeners' homes. The fault is definitely not in the wave of 2YA, as "Switch" was able to demonstrate. His aerial is almost in the shadow of the transmitting aerial of 2YA, and yet he can cut 2YA completely out to get 3YA, Christchurch. Not a whisper could be heard from 2YA when the friend listened to 3YA, even when the latter's intervals between items occurred.

ONE power board engineer within a hundred miles of Wellington has, through the use of a portable set, run to earth several serious power-line leakages which apart from creating interference with broadcast listening were a source of inefficiency in the reticulation system. His success has proved a boon to many listeners who on some nights found even 2YA Wellington badly "mushed" by the electrical roar from a nearby leakage.

LET us not fall into the mistake made in Australia. The Melbourne "Listener-in" says:—

"If there is to be any great increase in the number of broadcasting stations. Class A or Class B, one of the most important problems will be that of the selectivity of receivers. There have been indications in speeches made by Mr. Bruce to the effect that additional B Class stations will be established, and if these stations are operating in or near principal cities where stations already exist quite a number of the receivers in use will need altering or scrapping."

scure causes such as "absorption" by subterranean mineral belts.

THE promised two-way telephone service between Australia and London is a lot closer than most people anticipated—possibly only three or four months' distant now. A hint to that effect was dropped by the managing director of A.W.A. (Mr. Fisk) the other day, when commenting on recent tests with New York and Java. Those tests had only been conducted while Amalgamated Wireless was waiting a reply from the British Post Office to a request for two-way tests to prepare the ground for the regular service. Now that the British Post Office experts were ready to begin the experiments a start would be made as soon as schedules could be arranged. "I am confident we will be able to begin at least a limited telephone service with London early next year," Mr. Fisk added.

THE Australian stations continue to be somewhat elusive for Wellington listeners. They are still decidedly weak up till about 11 p.m. Thence onwards they gain quickly in volume, and by midnight are to be heard with fair loudspeaker volume. There is a still greater increased volume after midnight, and by 1 a.m. they are well up to workable loudspeaker strength. 2BL, Sydney, at present is generally received with the greatest volume in Wellington, followed by 2FC, Sydney, 3LO, Melbourne, 2GB, Sydney, and 4QG, Brisbane, in that order. The writer found 4QG comes to about second place about 11.45 p.m., but prior to that it is not so loud as 2GB.

DURING the Wednesday night transmissions of 2FC, Sydney, during this month at 10.30 o'clock (equal to 12.30 a.m. Thursdays, New Zealand time) foreign short-wave broadcast stations will be picked up and rebroadcast. On Wednesday, December 19, the station in Holland will transmit a special short-wave programme, which will be received in New Zealand at 12.30 a.m., Thursday, December 20. This will be rebroadcast by 2FC, Sydney. On Thursday, December 27, at 12.30 a.m., New Zealand listeners will be able to hear rebroadcasts from 2FC of 2XAF, Schenectady, ANN, Java, JHBB, Japan, RFN, Siberia, and the station in Holland. Unfortunately the hour of this short-wave rebroadcast will be rather late for the average Wellington listener.

AN enthusiastic admirer of the Sunday afternoon gramophone concerts by 2YA Wellington, has asked the writer to urge the inclusion of a couple of two-sided records of the new Italian operatic tenor, Alessandro Valente, who, despite his youth, has created a sensation in Italy. The records alluded to comprise operatic excerpts, turned out by the H.M.V. company.

A SYDNEY listener who was a guest of "Switch" on one evening last week, was astonished at the excellence of the 2YA studio orchestra. He expressed the opinion that it was second to none of the Australian studio orchestras, and that is saying a big thing.

A NOVICE wrote "Switch" recently asking whether it would be an advantage to embody two crystals, in parallel, in his set, and he said he had seen an English factory-made set with two crystals intalled in it. The signals would not be so strong with two crystals operating in parallel, and the English set operated only one crystal at a time. The other crystal could be brought into operation immediately by the movement of a switch, in the event of the first crystal failing to function at any time.

FROM time to time we hear of some schoolboy or schoolgirl being knocked down and killed or maimed by a passing motor-car, through the juvenile rushing out on to the roadway when playing in the street. A Chicago radio "uncle" has inaugurated a "Kerb is the Limit" Club among juvenile listeners, and has already signed up 345,127 boy and girls members.

MR. J. H. OWEN, ex-president of the Amateur Radio Society of Wellington, who is on a visit to England, writes that he will be leaving Home for Wellington on February 15 by the s.s. Rangitikei on her maiden voyage. Mr. Owen has been thoroughly investigating broadcast matters in England, and will have something interesting to tell his friends on his return. Perhaps Mr. Owen may be induced to broadcast an address on the subject from 2YA, Wellington, in addition to his promised description of his experiences to the Wellington Society.

A LADY asked "Switch" the other day whether her daughter, aged 17 years, could obtain a listener's license, or were licenses granted only to males. She is a widow and there are no men-folk in the household. On being informed that the fair sex are equally eligible to hold a listener's license, the lady seemed agreeably surprised!

5CL, Adelaide, which formerly rattled the diaphragms of our loudspeakers, and has for many months been at the best a mere whisper to Wellington listeners, has lately been relaying dance programmes by land-line from 3LO, Melbourne. The initial attempt proved such a success that the relaying is now going to be a regular feature of the Adelaide programmes. 5CL and 3LO are now owned by the same organisation.

COMMUNITY singing seems to have died a natural death in Wellington, owing, it is understood, to lack of financial support, and this is to be regretted, if even only from a broadcast standpoint. 3LO, Melbourne, broadcasts two community singing sessions every week. The community singing is performed in a Melbourne city theatre between noon and 2 p.m. on Mondays and Thursdays. A feature of these gatherings is the special music given by the 3LO station and dance orchestras.

THOSE listeners in Wellington who are able to be home between noon and 2 p.m. and operate multi-valve sets, have an opportunity of hearing either 2YA Wellington or 3YA Christchurch during the present Christmas gifts purchasing season.

3YA is particularly welcome on Wednesdays, when 2YA is silent. The Christchurch station, per medium of an average multivalve set, fills the house with music, and there is not a trace of fading by that station in the day-time.

NEWS comes to hand of the merging of the Freshman and the Freed-Eisemann radio companies, two famous American concerns, who are prominent manufacturers of the new all-electric receiving sets. Both concerns have distributing agents in New Zealand.

AN owner of a short-wave receiving set informs "Switch" that owing to the proximity of his aerial to that of 2YA, Wellington, he is unable to reach out for distant stations while 2YA is on the air, and he asks for a remedy. Probably nothing can be done to overcome the difficulty as the "proximity interference" will persist under all well-established methods of dealing with interference. The only thing to do is to suspend short-wave listening until 2YA is off the air.

A BIRD-FANCIER came to "Switch" recently with a novel suggestion for a "stunt" which has not yet been attempted in this part of the world, and that is the broadcasting of the song of "roller" canaries. He suggested that through the local poultry and bird-fanciers' society, the owners of "roller" canaries could be approached to give a turn at the studio of 2YA Wellington. Those who appreciate the performances of these wonderful feathered songsters would welcome the "stunt," he said.

TRAINED "roller" canaries can be readily induced to sing when required, as is demonstrated at the shows where they are judged on performance. 3LO, Melbourne, formerly borrowed the famous laughing jackass (giant kingfisher), owned by a lady, which laughed to order and delighted many a listener with its inimitable outbursts of hilarity. So far as "Switch" knows, "roller" canaries have not previously broadcast in Australia or New Zealand. We, of course, all heard the English nightingale gramophone record, and it proved most effective.

THE prize dramatic and humorous poem competition about to be conducted by the 2YA Musical and Dramatic Committee, strikes out on new broadcasting enterprise. What is also urgently needed is encouragement to New Zealand musical composers. It is a strange fact that the competition societies of this country do not offer special classes for musical composition, and broadcasting has an opportunity of getting in first. New Zealand, too, has reason to be proud of its two famous composers, Mr. Alfred Hill and Mr. George Clutsam, who have both gained world-prominence.

RADIO plays have so far not been popularly applauded in New Zealand. There may be two main reasons, the first of which is that the majority of listeners desire the evening sessions to be devoted almost exclusively to music, and secondly, the radio play requires special technique to "get across" the air, unless they possess unusually brilliant dialogue. "Switch" has, nevertheless, enjoyed some two-character sketches he has heard from 1YA, Auckland, in which Mr. J. F. Montague (Auckland Comedy Players) has fig-

ured. The writer has not had the privilege of meeting Mr. Montague, but he always relishes his sketches.

A MONG "Switch's" numerous radio friends he has discovered few who find any pleasure in listening to the average lady elocutionist on the air. Few of these ladies, very few, infuse a natural touch into their work, but rush on in a sing-song fashion much on the same lines as the school children follow. It may be nervousness due to "microphone fright" that makes the work of many slipshod. Others are so overwrought and frankly melodramatic. A true dramatic sense seems lacking among many of these lady elocutionists. There are two or three ladies in Wellington who can deliver the goods, but they seldom face the microphone.

SWITCH would like the 2YA Musical and Dramatic Committee to offer prizes as encouragement to lady elocutionists. There is talent available, and it only requires to be brought out. The dramatic stage has from time to time received valuable recruits from New Zealand. Miss Marie Fix and Miss Isobel Wilford, both of Wellington, are now playing prominent parts on the London stage. The Allan Wilkie Shakespearean Company also includes two or three New Zealanders.

A CORRESPONDENT forwards the following:—"Broadcasting should be aware of giving us more than homeopathic doses of high-brow lectures on the radio. Arthur Brisbane, writing in the Chicago 'Herald,' says: 'Eighty thousand rah-rahing Americans will watch Notre Dame play football against the Army team. How many of the 80,000 would sit in the cold listening to a debate on some highly moral or scientific subject? What, should you say, is the average intellectual level of this age?' Yes, what is it?"

A BROADCASTING station gets some curious correspondence in its daily mail bag. Lately the New South Wales Broadcasting Company received a letter, written in a laboriously infantile hand, asking that Station 2BL, during the usual Sunday morning musical programme, should play "Melancholy Baby," followed by a item described as "Sunshine." The small correspondent further requested that her sister—the baby of the family—"Emily Ann," aged 18 months, might have a few words addressed to her by the announcer, at lunch time, as she was having trouble with her "st teeth!" The announcer on that occasion is not a deputy uncle for nothing, and he rose nobly to the occasion.

A SET of high-class valves were shown to "Switch" the other day which, although their filaments lighted, were practically "dead." The owner said they were perfectly good one night, and on the following night they refused duty. On cross-examination he confessed he had momentarily touched his "B" batteries with his "A" battery cords, but he had not burnt out the valves. It was thus evident he had "paralysed" his valves through carelessness. They were, fortunately, all restored by burning them for several hours with the "B" batteries disconnected and the filaments turned on brightly. This was a lucky recovery, as in many cases when this

treatment is applied it is found to be ineffective.

"SAND" (Lyall Bay) writes that he had difficulty in obtaining a satisfactory "earth" until he used a chemical combination which he buried in the ground. This proved a distinct advantage in somewhat sandy soil, he says.

A LETTER comes to hand from an American electrical company stating that it is not possible to "re-activate" a.c. valves. The ordinary radio valves can be given a new lease of life by the process of "reactivation," and instruments are sold for that purpose. The a.c. valve, however, is a different proposition.

"RADIO is being neglected by the school system," James McLafferty declared in a recent talk over KGO, Oakland, California. "Many of the boys employed in radio shops are working because they could not obtain the information they wanted at school." A petition is being circulated in Oakland, in an effort to have a course in radio technique and mechanism added to the school curriculum. The Oakland Mothers' Club and prominent business men throughout the city have given their approval, and KGO is offering support to the movement.

A WELLINGTON enthusiast who formerly operated the old three-coil regenerative set, now truly obsolete, found an unexpected market for a big range of tuning coils among the wireless operators of steamers visiting Wellington. He was glad to quit the lot at a low figure as they were otherwise a dead loss, and the operators were pleased to get the coils at the figure.

WELLINGTON listeners in certain areas are still troubled by interference from some amateur (possibly unregistered), who transmits during regular broadcasting hours. There is a rod in pickle for this individual, for, unless he desists, he will be tracked down and prosecuted.

WELLINGTON listeners who have complained about being unable to hear 7ZL, Hobart, will realise that the Tasmanian station cannot be expected to come in with anything like loudspeaker audibility when it is known that its power is rated at only 600 watts, which is less than 300 watts according to the New Zealand system of rating. The Hobart station, however, will almost immediately operate with a power of 2500 watts, successful tests having already been carried out.

WELLINGTON listeners have discovered that the "daylight saving" scheme, although it is a matter of only half an hour, has assisted in rendering the Australian stations almost impossible until too late an hour at night to afford much entertainment. The seasonable protracted daylight has added its quota to the difficulty, and on top of all this, the sunspot eruptions seemed to have contributed further to the weakness of the trans-Tasman stations. Radio traders are experiencing complaints from new purchasers of high-priced sets that they are not bringing in the Aussie stations as well as expected. Dealers have a hard life what with sunspots, summer reception, static, etc.

To Aid Young Artists

An American Scheme

A REVOLUTIONARY change in the present system by which artists in New York are introduced to the musical public is forecast in an arrangement recently completed between the National Broadcasting Company and the National Music League. These two organisations are combining in an undertaking which aims to relieve young musicians of the heavy expense now involved in launching themselves upon their careers. It also purposes to focus wider attention on the first appearances of unknown artists. The National Broadcasting Company undertake to sponsor and finance the debut of promising young artists selected through auditions by the National Music League. The usual concert recitals, with the public and music critics present to hear the artist in person, will be arranged. These will be held in the large concert auditorium of the National Broadcasting Company, which seats three hundred people. A new feature, however, will be that they will be widely broadcast so that the radio audience may listen. This means that new artists instead of performing for only a limited concert audience will, in addition, be heard by a large outside public. It also means that the opinions of the New York critics, who, it is hoped, will attend these concerts, will be supplemented by those of critics in other parts of the country who may hear these first performances broadcast.

Old Radio Components

THE fact that radio parts ordinarily do not wear out, brings up the problem of what to do with old-style variable condensers, sockets, audio transformer tuning coils, cumbrous old dials, and so on. If you have been a radio experimenter for some time your work bench is no doubt covered with parts that are just as good as they ever were. Yet you do not wish to put them in a set for your own use.

However, if you consider all those with whom you have acquaintance, you will recall one or two people in straitened circumstances, who would appreciate a radio receiver of any kind. They, at least, would not be particular about the fine points of modern apparatus. Get the old parts together and see if you can, with perhaps the addition of a chining new panel, put together a set that will give one of these friends a great deal of pleasure.

Of Value to Music

A WELLINGTON listener, "Musicus," writes under a recent date "The very successful relay to Wellington, and broadcast by 2YA, of a concert given in Wanganui, gives rise to a few observations. I will not comment on the quality of the musical talent; that would be an attempt to guild the lily, for the quality of the artists who broadcast, individually and collectively, was truly exceptional, and bore out to the full the advance announcements. The concert, however, leads a train of thoughts concerning broadcasting. I would not, perhaps, refer to them were it not for the admirable little speech made by Mr. Louis Cohen, president of the North Island Brass Bands' Association. Mr. Cohen is a devotee of the arts, and especially of music—and he thanked radio broadcasting for what it had done to bring the best of music right into the homes of the people. It was a noble sentiment, ably expressed. Mr. Cohen referred eloquently to the far-reaching radius of the broadcasting stations—to the fact that his remarks might be heard all over New Zealand, in Australia, Japan, the Pacific Islands, America, perhaps, for all he knew, in Mars—and he gloried that there was such a means for spreading the love of good music. The sentiments expressed by Mr. Cohen might well be taken to heart by all musical organisations whose aim is to encourage the appreciation of music. In the past, some musical societies have been very loth to permit their concerts to be broadcast. The Wanganui band's example, and the sentiments expressed by Mr. Cohen, should do much to break down the barrier—that word "barrier" would seem to be common to some musical societies, as well as to racing clubs—which makes a musical organisation very self-centred, with no vision beyond the present membership roll, such kill the sporting instinct which should allow less fortunately-placed people to enjoy at a distance what they cannot be present at."

A FRIEND asked Switch recently whether it would be worth while importing a radio-vision receiving kit, so that he could construct a set for picking up radio-vision transmission. He was advised not to touch radio-vision in its present stage, as, unless the receiving set is fairly close to the transmitter, the results would be completely disappointing. The New Zealand stations are not likely to take up radio-vision until it has emerged from the "wooden age," and that may not be for many years yet.

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The Modern Valve

Story of Its Evolution.

THE story of the modern valve is as interesting and enlightening as any page of radio history. It shows how man, continually striving against odds, has finally evolved a piece of apparatus that has made reception as we understand it possible.

Radio reception was first made possible by the discovery of the crystal as a detector. Round this, a set was built, and for long years radio history was practically at a standstill as far as receivers were concerned. Sounds could be received from short distances, but could not be amplified.

Then came the vacuum tube, or valve, consisting of a wire capable of emitting electrons when heated, a sheet of metal to receive them, and a fine wire mesh to regulate the flow. These had special properties when enclosed in a vacuum tube—that of amplifying the incoming signals.

ONCE having the clue, radio development went on apace. When broadcasting first became popular, in 1921, the valve in general use was the 0.1 type, used for all purposes in the sets of that day.

This valve required one ampere of filament current at five volts, and had a high internal resistance. If a set had seven or eight valves, an enormous load was placed on the battery, and even a two-valve set drew as much current as a modern eight-valve set.

In the spring of 1922, this was superseded by the .01A valve, having 1-ampere filament at five volts, a plate impedance of 10,000 ohms, a mutual inductance of 800 microhms at 90 volts plate. Grid voltage had not yet been applied.

By cutting the filament to one-fourth a great incentive to multivalve sets was created, and thereafter the future of radio as a household instrument, was assured.

IMPROVEMENTS were made steadily till 1924, when the elements were made more rugged, and the grid and plate structures were moved closer together, thereby increasing the mutual conductance to 1000, and reducing the impedance. Minor improvements have still been effected, but none of revolutionising importance, except, perhaps, two, which are a modification of the ordinary valve.

The alternating current valve, which would operate from the electric mains with the addition of a small transformer promised to effect great changes in the sets

where power was available. They did not, however, accomplish what was expected of them, it being found that the smooth current in the ordinary valves produced generally the better results.

THE screened grid is, however, the most promising of modern valve modifications. This valve showed itself capable of great accomplishment when in the hands of someone who was capable of using it to its best advantage. The earlier type had double ends and would not fit the normal base, but this has been rectified, and the modern screened grid fitting a standard socket has an extra terminal at the top.

It has been found that this valve gives greatest service on the high frequency side of the receiver.

MENTION has not been made of the double and triple grid valves. The former is of special value to those wishing high amplification for low plate voltage and filament consumption. Although usually of high resistance, this valve is of great value to the crystal owner who desires to amplify at low cost.

The pentode (triple grid) is capable of great achievement as a final power valve. It requires high voltage, but with an amplification of 100, it is to be preferred when eliminators are available.

Valves have been united to form two-in-one and three-in-one valves. In these cases the parts of three valves are enclosed within a single vacuum tube.

Each adaptation has its particular advantage, and radio has become so specialised that a valve in its wrong place causes distortion and may spoil an otherwise perfectly good set.

Valves of the Future

Development of Multi-Electrode Valves

A few years ago it appeared as if there was little further progress to be made in the design of thermionic valves beyond the development of tubes with lower filament energy consumption. At that time interest was centred almost completely on the three-electrode valve, which was then, as it still is to-day, the most widely used of all types. But makers are now paying more attention to the undoubted advantages which accrue from the use of valves with more than one grid, and the advance notices of the new type

shown at the Radio Exhibition, which was held at Olympia on September 22-29, demonstrate this very markedly.

Screened Grid Valves.

FOR some time double-grid or four electrode valves have been on the market, but rapid strides have not been made until the Osram S625 appeared on the market. This gave the needed impetus to what appeared was going to be a revolution in RF reception. This valve includes an extra grid situated between the normal grid and the plate, the function being to eliminate the capacity between these two electrodes and thus ensure stability in the HF side of the receiver without recourse to the usual neutralising condensers.

The S625 valve, however, required a special kind of valve socket, and its introduction into an old set required considerable modification of the high-frequency side. The same makers now announce a new valve of this type which will fit into the standard four-pin socket, the fifth electrode being brought out to a small terminal on the top of the glass bulb. As the type name indicates, the new S215 runs on two volts with a current of 0.15 ampere, as compared with the six volts and 0.25 ampere required by the S625. There is therefore a gain in filament efficiency.

Other screened grid valves, requiring little filament current are the Radio-tron UX222 with a filament consumption of .132 at 3.3 volts, Philips 442 requiring .06 amperes at 4 volts and PM12 (Mullard) screened grid are characterised by extremely high impedance.

Pentode.

THE introduction of still another electrode, making a valve with five electrodes, was first shown to advantage in Mullard's PM22, and the advance announcements of the new valves show that other makers are realising the importance of this type of pentode valve as an efficient output valve. Philips have produced a splendid pentode A443, which, when used in the last stage adds tone, volume and quality to output.

THE penode may be regarded as a screened valve with an additional earthed screen grid between the screening grid and the anode. By the introduction of this third grid an undesirable interchange of electrons, bombarded out of the anode and caught by the screen grid, is prevented. Such an interchange takes place in an ordinary screened-grid tube with only four electrodes. With this pentode a remarkably wide grid range of undistorted output is obtained, the characteristic being substantially linear for a total grid swing up to about 15 volts.

THE introduction of extra electrodes in the ordinary three-electrode valve has thus led to improvements in both high-frequency amplification and lower-frequency amplification, and there seems little doubt that before long a considerable number of the tubes in standard multi-valve receivers will be of the four or five electrode type.

Transmission of Educational Programmes

Important Developments Foreshadowed

BOTH in the Dominions and in foreign countries the B.B.C.'s early recognition of broadcasting as an important medium of education is dorsed, as the following instances show:—

Australia Notes the Kent Report

IN announcing the decision of the N.S.W. South Wales Broadcasting Company to transmit half-hour broadcasts to schools every afternoon, the experiences and progress of the B.B.C. connection with educational transmissions are commented upon and extra quoted from the report of the K. Education Committee.

State-owned Sets for Canadian Schools

THE vision of radio in every school of Canada was held out by the Provincial Secretary of Quebec in recent speech. He prophesied as a future of future educational work State-owned receiving set in every school "with the bad jazz cut out" with regular concerts of the best music. Canadian stations have for some time broadcast special transmissions to schools as can be seen from the accompanying picture.

U.S.A. Music Lessons.

DETAILS of a plan by which hopes to bring symphonic music to the school children of the United States have been worked out by Walter Damrosch, musical adviser of the National Broadcasting Company. It is announced. By arrangement with the Radio Corporation of America he is to broadcast forty-eight concerts, first of which took place on October 1. The R.C.A. Educational Hour, as will be known, will be broadcast from the studios of the N.B.C. through twenty-six stations.

The concerts are to be in four series, graded, according to the mental development of children and young people from the third grade up to high school and college. The first series, for third and fourth grades, is designed to appeal to the very young, and also to show how music is linked up with the everyday things of life.

There is one entire programme "Fairies in Music," another on "Nature in Music," and still another headed "Animals in Music." In other programmes Mr. Damrosch will bring the quality of the four different varieties of instruments in the orchestra, strings, wood wind, brass, and percussion.

A somewhat similar grouping of subjects appears in the series for Grades 5 and 6 (standards 3 and 4), which began on November 2. The compositions chosen, however, are slightly more difficult, and in place of "Fairies" finds "Fun in Music" and slightly more emphasis placed on the emotional quality, as, for instance, in the programme on "Sorrow and Happiness."

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