

Programmes Continued

4YA, DUNEDIN (463 metres)—SATURDAY, NOVEMBER 12.

- 7.15 p.m.: News session.
 8.0: Town Hall chimes.
 8.1: Baritone solos—Mr. R. Mitchell, (a) "Like Stars Above," McDonald; (b) "Angel of Light," Donizetti.
 8.12: Pianoforte duet—Misses Alice Wilson and Marjorie Watts, selected.
 8.17: Soprano solos—Miss Mattie Edgar, (a) "I Go on My Way, Singing," Dreville-Smith; (b) "Dawn Skies," Clark.
 8.18: Clarinet solo—Rev. G. E. Moreton, selected.
 8.22: Tenor solos—Mr. W. Mills, (a) "Four-Leaf Clover"; (b) "At Dawn-ing," Cadman.
 8.28: Pianoforte solo—Miss Alice Wilson, "Prelude," Chopin.
 8.33: Contralto solos—Miss Winnie McPeak, selected.
 8.39: Cello solo—Mr. Malcolm Robilliard, "Londonderry Air."
 8.44: Address by Mr. A. W. Wilson, manager of the Government Tourist Department, Dunedin, "Tourist Resorts of the South Island."
 9.0: Pianoforte duet—Misses Alice Wilson and Marjorie Watts, "Unfinished Symphony," Schubert.
 9.5: Baritone solos—Mr. R. Mitchell, (a) "Romance," Bonner; (b) "Silver Threads Among the Gold."
 9.12: Clarinet solo—Rev. G. E. Moreton, selected.
 9.16: Soprano solos—Miss Mattie Edgar, (a) "White Bird," Drummond; (b) "Give Me Youth and a Day," Drummond.
 9.22: Cello solo—Mr. Malcolm Robilliard, selected.
 9.26: Tenor solos—Mr. W. Mills, (a) "My Heart's Desire," Clarke; (b) "The Hawke," Clarke.
 9.34: Pianoforte solo—Miss Alice Wilson, "Refrain de Berceau," Palmgren.
 9.42: Clarinet solo—Rev. G. E. Moreton, selected.
 9.47: Contralto solos—Miss Winnie McPeak, selected.
 9.53: Cello solo—Mr. Malcolm Robilliard, selected.
 10.0: Close down.

Sunday, November 13th

1YA AUCKLAND (333 METRES)—SUNDAY, NOVEMBER 13.

- 6.55 p.m.: Relay of church service from Church of Christ, West Street. Preacher, Mr. Wilcock; organist, Mr. I. Lambert.
 8.30: Relay of municipal organ from Town Hall, Mr. Maughan Barnett, organist.
 9.30: A thought.
 9.31: Close down.

2YA, WELLINGTON (420 metres)—SUNDAY, NOVEMBER 13.

- 6 p.m.: Children's session, conducted by Rev. E. Weeks.
 6.55: Relay of evening service from the Trinity Methodist Church, Newtown (Anniversary Service). Preacher, Rev. A. N. Scotter, B.A.; organist, Miss L. E. Thawley, L.A.B.; musical director, Mr. H. J. Crewes.
 8.45: Relay of Port Nicholson Silver Band concert from the Grand Opera House.

3YA CHRISTCHURCH (306 METRES)—SUNDAY, NOVEMBER 13.

- 8 p.m.: Children's song service, by Uncle Sam, at 3YA Studio, assisted by the Cambridge Terrace Methodist Sunday School scholars.
 8.30: Relay of evening service from Oxford Terrace Baptist Church. Preacher, Rev. J. Robertson, B.A.; organist, Mr. Melville Lawry; pianist, Miss V. Haliday; musical director, Mr. G. W. Drayton. Choir of 400 voices.
 9.50: Rebroadcast 2YA, Wellington (conditions permitting).

4YA, DUNEDIN (463 metres)—SUNDAY, NOVEMBER 13.

- 6.30 p.m.: Relay of service from Knox Church. Preacher, Rev. Tulloch Yuille, B.D., M.A.; organist, Mr. W. Paget Gale.
 8.3: Relay from St. Kilda (weather permitting) of concert by the St. Kilda Band. Conductor, Mr. James Dixon.

NO DANGER FROM LIGHTNING

Prospective broadcast listeners, and, indeed, many radio owners, are needlessly alarmed over the possibility of lightning striking their aërials. The myth of lightning being attracted by an aerial has been exploded more than once. A properly installed aerial,

grounded through an approved lightning arrester, is a protection rather than a hazard. It has the same construction and character as a lightning rod. It is stated that in the United States, with its severe thunderstorms, the chance of lightning striking an aerial is one in about 85,000, and the actual damage would probably not exceed a few shillings. In Wellington and other New Zealand cities an authentic case of lightning striking an aerial has not yet been recorded.

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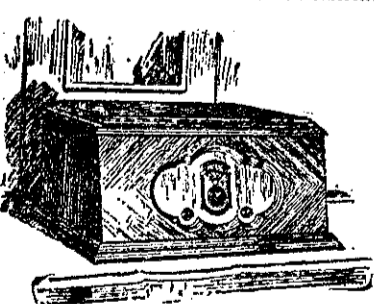
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THE FADING INVESTIGATION

SOME INTERESTING THEORIES

Time does not permit of very much of this matter being dealt with this week, but next week an endeavour will be made to consolidate the particulars gathered from the reports, and arrive at final conclusions.

For the meantime some matter will be given regarding fading generally, and also a few extracts from reports that may have a bearing upon final decisions.

It has been established by careful research in America that the carrier and side-bands do not fade together as a unit, but each of the three frequencies thus represented may fade independently of the other two. This means that fading may be selective with regard to time and frequency, or that the transmitted wave may encounter causes that will produce fading of its own frequency components, apart from any fading that may be caused by want of agreement in time at the meeting of the high and low, or reflected and direct earth-travelling waves.

Attention has already been directed to the fact that there is a correlation between the variation of the earth's magnetic field and intensity of radio reception.

In an article published on October 21, another possible effect from earth currents was discussed. This article stated that further investigation into the matter would be prosecuted by the Carnegie Institute of Washington, and in case this should have escaped the notice of some readers, a small portion of particular interest is reprinted as follows:—

"Before the development of radio, the conception of a region in the upper atmosphere highly capable of conducting electricity was invoked as a necessary part of the mechanism giving rise to changes in earth-currents and the earth's magnetism. A similar condition of high conductivity in about the same region of atmosphere is now also demanded by some features of radio transmission. It thus seems likely that the same conducting region affects both earth-currents and radio, and on that account certain consistent correspondences may be expected between them.

"The data at present available for such comparison, though meagre, indicate that the daily as well as the annual change in signal intensity for radio waves in the radiocast of frequencies is the reverse of the change occurring in the earth-current activity. These, as well as other points of correspondence could be deduced from the correlations found by Dr. Greenleaf W. Pickard, of Boston, between the earth's magnetic activity and variations in signal strength, for it is well known that earth-currents and terrestrial magnetism are closely related. Furthermore, since good theoretical grounds now exist for expecting terrestrial magnetism to directly affect radio transmission, perhaps producing such phenomena as fading, one may also find earth-current manifestations occurring in conjunction with fading.

"Atmospheres or static, that well-known nuisance to the radio audience, is to the geophysicist an interesting phenomenon, deserving more of his attention than it has thus far received. This phenomenon has an apparent counterpart in earth-currents and makes itself most commonly evident on telephone lines, in which a ground return is used producing sounds in the receiver which resemble in a remarkable degree the clicks, crashes, grinders, etc., which interfere with radio reception.

"Similar changes are probably occurring in terrestrial magnetism, but the magnetic instruments are not capable of responding to such rapid changes. The electrical effects can, however, be easily detected and even measured or photographically recorded without great difficulty, thus admirably supplementing the magnetic measurements. With ample measurements of these magnetic, earth-current and radio effects over the same interval of time and in the same general region, doubtless much of both practical and theoretical value may be learned.

"The resistance offered by the ground at the surface of the earth to the flow of electricity also plays a part in the transmission of radio waves, and such knowledge of this property of the earth as may be obtained by 'resistivity-surveys,' similar to those made by the department of terrestrial magnetism of the Carnegie Institution of Washington as part of a study of earth-currents, would doubtless indicate the reason for unfavourable reception in certain directions from some radiocast stations and even in all directions from a few."

NEW PLYMOUTH.

On the second day of test, September 27, reception was about the same in Taranaki country districts as on the 26th, intense fades per report averaging 5. New Plymouth had better reception than on the previous night, intense fades averaging 8 per report. A set at Bell Block registered 23, the only high number outside New Plymouth, where one set registered 28 and another none, but a good number of slight were registered in this case.

Mineral deposits are generally considered to have a strong effect upon radio waves, and in this connection the vast expanse of ironsand in Taranaki may be mentioned. The writer is not at present aware of the exact area covered by this sand, but a specimen on hand from Kawhia adheres to a magnet like iron filings, so that its metallic composition and consequently high conductivity can well be imagined.

A reader at Kaituna has written to say that he gets no fading from his situation four miles from Mount Egmont. Fortunately for him, being situated near Kaponga, on the Wellington side of the mountains the radio waves have a clear run, and no fading is experienced anywhere in that district. It is down towards Inglewood and New

Plymouth that the trouble is evident, and the only regret is that there were not more reports from this area.

FINAL ITEMS FROM REPORTS.

Here are a few extracts from reports which tend to illustrate the diversity of reception, and showing that at a distance of 400 miles and more some receivers get almost perfect reception, whilst others the same distance, or much nearer, may have very poor results.

NORTH AUCKLAND.

Helensville.—"Transmission at times during fading very mushy. Exceptional volume recorded at 8.44, 9.20, to 9.23."
 Hokianga.—"Generally 2YA is good, with tremendous volume, and fading not bad enough to be a bother."

Waimate.—"The only time we have fading is when something intervenes (in the far distance), generally morose. It may be of interest to note that listeners around and in Dargaville (40 miles south of here) find 2YA fades dreadfully, and often cannot be tuned in again, and were very surprised when I said we were hardly ever troubled with even a slight fade. 2YA is easily our best New Zealand station, but 3YA is very good." (3 valves.)

Hikurangi.—"1YA and 2YA quite often come in with almost the same strength. Lecture on 'Fading' very distinct, whilst the one on 'Spitzbergen' could be followed only by careful listening."

Mangonui.—"2YA was received very poorly. Fading was exceptionally bad." (Five valves.)

DOWN SOUTH.

Oamaru.—"Announcements and lectures exceptionally clear and free from distortion of any kind. Musical items: Reverberation noticeable throughout the programme, especially in concerted items. Fairly clear reception of vocal solos; choruses blurred and dissonant; pianoforte treble clear, bass confused. Concerted instrumental items, bad reverberation, harmony confused. Violin and other instruments playing treble were fairly clear."

Gore.—"Fading practically negligible on both evenings. We have quite often had fading from 2YA, but the evenings selected were exceptionally good and the only difficulty we had was to cut down reception, and this is our usual experience."

Sutton, Otago.—"2YA strong at night as a rule, but no good in the afternoon."

Invercargill.—"2YA signals are always weak for about the first two minutes after 8 p.m. We can 'just hear' the chimes of 8. It seems as if the station does not commence with full power, but gradually increases it." (Isolated two miles.)

Lumsden, Southland.—"2YA fades very little here, and I have never known it to fade away altogether, and often have to use only four valves out of the five."

Palmerston, Otago.—"A fair amount of fading from 2YA. 3YA fades worse than 1YA since new wave-lengths came in. Daylight transmissions from both stations (? 2YA and 3YA) is wonderful and quite without fading."
 Dunedin.—"2YA always fades more

between 9 and 10 than between 8 and 9."

Myross Bush, Southland.—"As a rule we have less fading from 2YA than from 1YA or 3YA, though there is more distortion from 2YA than from either of the other stations. The 2YA announcer's voice is always clear and natural, music from studio orchestra nearly always distorted or very rough. Speeches or lectures from 2YA generally very good (clear), but musical items are generally more pleasing to the ear from 1YA or 3YA."

Hillgrove, Otago.—"I think that the best hope of improving matters lies in experimenting with different wave-lengths, if possible. We noticed here a distinct reduction in fading from Auckland when its wave-length was lowered."

Winton, Southland.—"Fading very slight. Reception too good for a proper test." (Receiver situated in flat, open country.)

A recent "Bulletin" contained the

following paragraph: Here and there in Sydney are small areas in which it is totally impossible to listen-in at any hour of the twenty-four, the most up-to-date receiving set remaining irresponsive. One of these areas is at Strathfield, on the side which faces the Liverpool Road, and another one is at Mosman, not far from Middle Head Road; there are two others also in different parts of the northern and western suburbs. As there are no power-houses or large electrical installations interfering nearby, the only feasible explanation is that the source of the trouble is somewhere in the earth, perhaps in the form of some mineral deposit. There are larger regions in the State where intermittent interruption takes place, lasting sometimes for several days, but the reception is perfectly clear at other times.

THE ELOCUTIONIST

DIFFICULT TO BROADCAST.

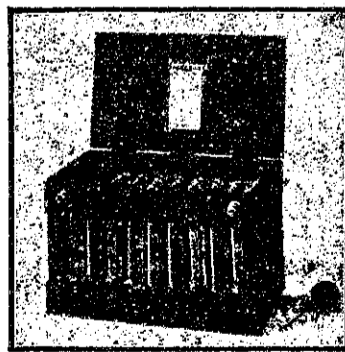
If there is one word that causes a broadcasting manager's heart to sink, it is "elocutionist." The unsuspecting individual who comes in to the studio, and offers to give a recitation on the air little knows what extremely thin ice on which he, in his ignorance of the technicalities of radio, blunders. The air still has its limitations, despite the remarkable strides which have been made, and the humble recitation is the least attractive of the hundred and one diversities offered. When we have television this will be overcome to a very large extent, but there is still the difficulty of what is known as "frequencies" in the human voice to contend with. The rise and fall of ordinary conversation is as natural as it is necessary; without it, the monofony would be intolerable. And this is the elocutionist's downfall, on the air. His listeners cannot see him, and consequently the force of action is lost. He has, therefore, to obtain effect through the inflection in his voice, and this is drastically curtailed. It takes an artist of more than ordinary ability to rise paramount above all these difficulties.

A radio valve large enough to hold a tall man now operates in the transmitter of the American station WJZ. It is seven and one-half feet high, weighs 100 pounds, and has a power of 100,000 watts.



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