

WORLD-RADIO



AND FOREIGN



DOMINION

PROGRAMMES

WITH WHICH IS INCORPORATED "THE RADIO SUPPLEMENT"

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FRIDAY, APRIL 22, 1927.

Two Pence.

PRINCIPAL CONTENTS.

The Microphone.

By Captain Eckersley.

Wireless Step by Step—III.

A Mediterranean Melody.

Continental Broadcasting.

Via Ether.

Which Station Was That ?

WORLD-RADIO

Station Identification Panel
(No. 64.)

MARSEILLES (France).

Wavelength: 300 m. Power: 500 watts.
Approximate distance from London:
620 miles.

Call: "Allô! Allô! Ici le poste radio-téléphonique de Marseille."

No interval signal.

At opening and end of transmission a few bars of an old Provençal folk song from Bizet's opera *L'Arlésienne* are played.

Apart from own concerts, relays at times from PTT, Lyons and Paris (Ecole Supérieure).

Closes down as usual with French stations: "Bonsoir, Mesdames," etc.

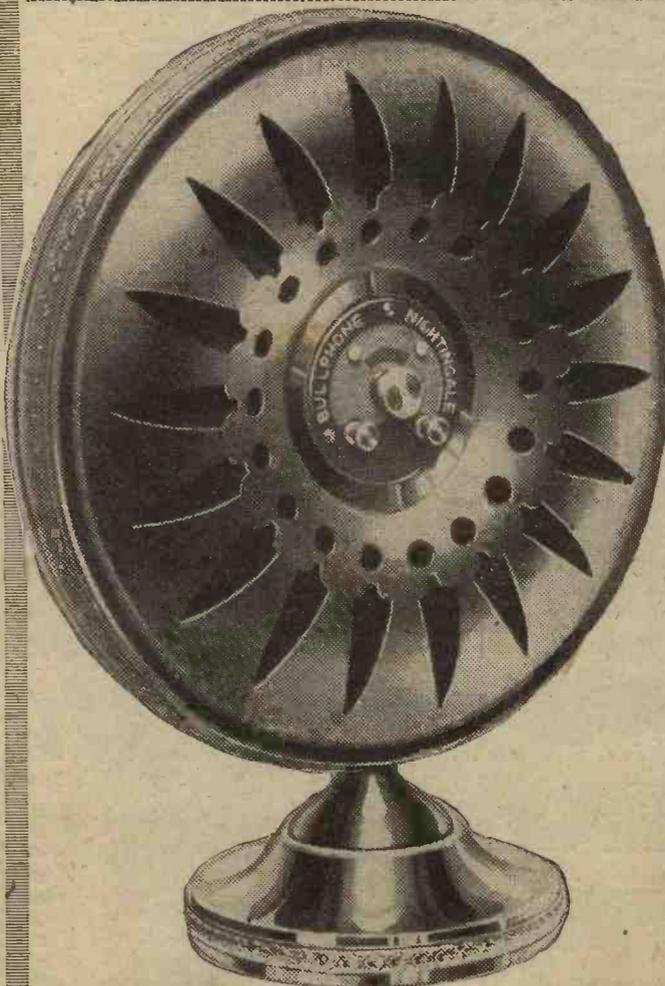
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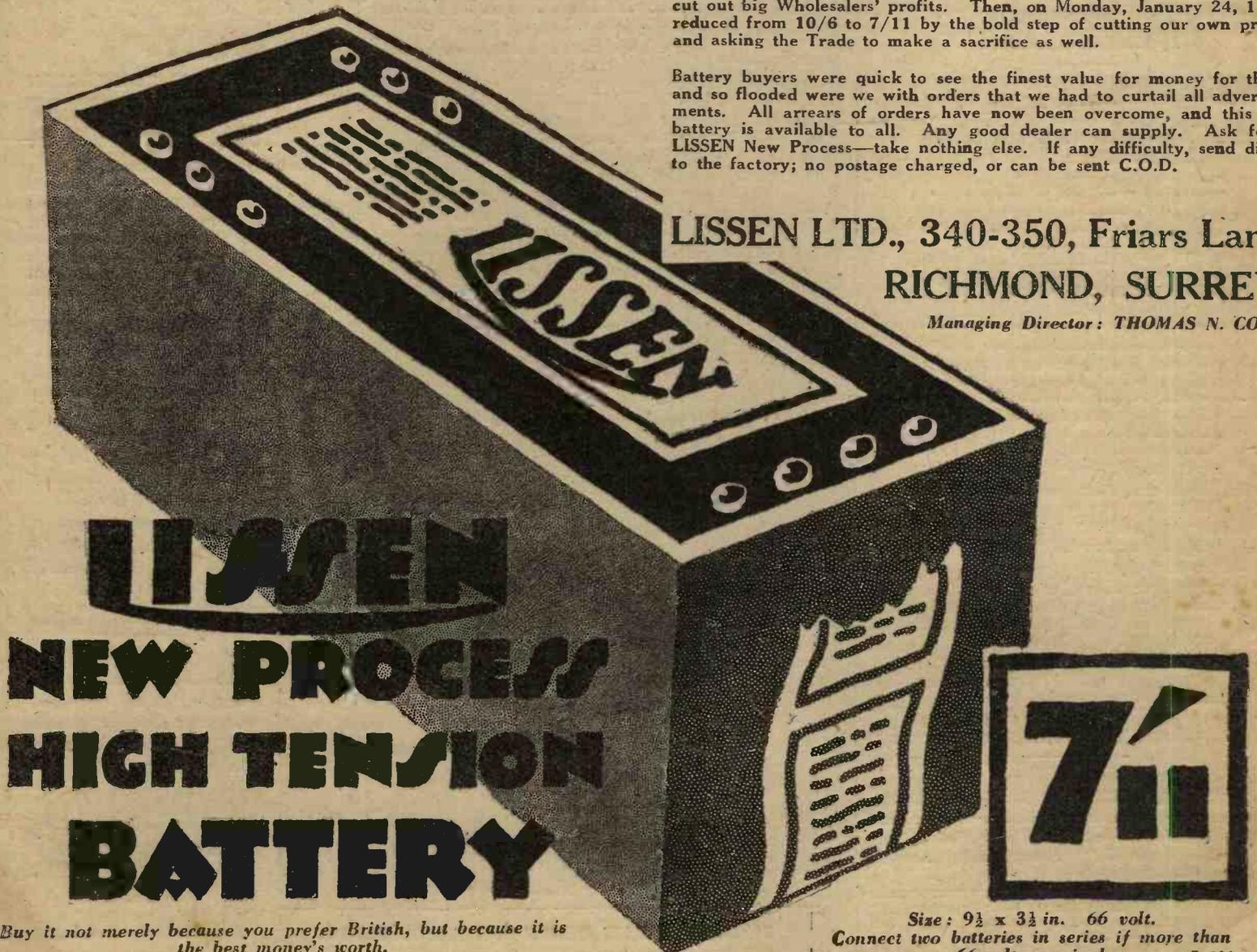
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TECHNICAL CONSIDERATIONS.

By Capt. P. P. ECKERSLEY.

IV.—The Microphone.

THE microphone converts the impulses of higher and lower pressure in the air (which gives our ears the sensation of sound) into corresponding impulses of higher and lower electrical pressure.

The relative performances of various types of microphone can be assessed in terms of the following qualities:—

1. The exactness of response over the whole frequency scale from lowest to highest audible frequency;
2. The degree of background noise;
3. The robustness and reliability of the device.

In general there are three types of microphone: one using the electromagnetic, the second the electrostatic, and the last the variable resistance principle.

In the electromagnetic type of microphone the sound impinges upon some moving armature which either cuts a flux or causes variation in a flux. It is, in fact, a "dynamo" microphone.

In the electrostatic type of microphone the impinging sound moves an armature which forms one plate of a condenser. The condenser is charged through a resistance, and this causes variation of potentials due to the variation of charging current.

In the variable resistance type a moving armature increases or decreases the pressure upon a layer of carbon, and this proportionately increases and decreases the resistance of the carbon and hence the currents flowing through it.

Frequency Characteristic.

We have seen that in all cases an armature or diaphragm moves. The diaphragm has mass, elasticity, and resists motion. This means that it must have a resonance limited only by the damping—that is, it must respond to certain frequencies more than to others. We do not want it to give predominance to any one frequency or band of frequencies, and we therefore have this first problem, which is endemic to all microphones—that we must eliminate resonance within the audible gamut. (Incidentally it is interesting to note that equations can be written down exactly corresponding to the common electrical equations for resonance, taking mass as inductance, elasticity as the reciprocal of capacity, and resistance as damping. It will then be found that the electromagnetic and electrostatic types of microphone require different forms of response.) It is said above that the general principle of getting uniformity of response is to eliminate

resonance in the movement within the audible gamut, or for practical purposes between 50 and 10,000 vibrations a second. The second general method is to introduce so much damping that the existing resonance is to all intents and purposes eliminated.

The Western Electric microphones use both in their carbon and electrostatic microphones a diaphragm so tightly stretched that it has a resonance above an upper limit which is, for practical purposes, above audibility. There is no marketed microphone which has an intentional resonance below audibility. It is more difficult to cut off the effects of resonance electrically—which, of course, must be done by filters or transformers, or in some way—at lower than at higher limits.

It might be said that, if we took a layer of carbon and talked at it, it could have no resonance—that is, if it had no diaphragm to press it in and out and was simply in contact with the air. This is not true; mass, elasticity, and damping are all present in the granules. Again, all that can be done is to choose a resonance point outside audibility. This is done in the Marconi-Reisz microphones. Proposals have been made to use flames which change their resistance when the air pressure increases or decreases around them. The flame too has mass and elasticity, but more usually the material which supports the device—the jet from which the flame springs, as it were, or the electrode at which it is made—has resonance. It must be remembered that in this resonance elimination nothing remotely connected with the device must resonate; hence rubber suspensions, massive fixed parts, &c.

Assuming that in some sort resonance can be eliminated in every sort of microphone, it must at once be realised that sensitivity is enormously reduced. The ordinary Post Office microphones that you speak into when you "ring up" anyone are very resonant, and therefore sensitive. They do not need for ordinary speech intelligibility to give an equal response over the whole frequency scale, and so they are made sensitive only between certain quite relatively small limits. But the broadcasting microphone, owing to peculiar requirements, must have no resonances, and therefore is insensitive; thus it has to have an amplifier associated with it.

As it is impossible to deal adequately with the microphone in the limited space of this article my next one will continue the subject. In the meanwhile we have seen that there are in general three principles for conversion of sound to electrical impulse, but that in all resonance must be eliminated. When this is done sensitivity is cut down, and every broadcast microphone therefore requires an amplifier.

Stations Worth Trying For.

By THE SEARCHER.

THE week just passed has provided one of those amazingly bad patches which come at times, though fortunately not very often. If one had not had experience of long-distance reception in past years, one might imagine that the fact that stations could not be heard at all, or came through very weakly, was due to the lengthening of the daylight hours and to the coming of summer time. Though these causes, naturally, do not improve matters from the point of view of the seeker after far-away stations, they are not entirely responsible for the melancholy state of affairs prevailing in the ether at the moment of writing; in a short time we shall probably find that we are hearing stations quite well again. To my mind, these dead periods make long-distance work all the more interesting owing to the very fact that they add to its difficulties. One feels far more satisfaction over the capture of a single distant station, when conditions are bad, than over the logging of a dozen when they are particularly good.

To Combat Summer Time.

Meantime, we must realise that similar bad patches are likely to occur, at intervals, during the summer, and it is as well therefore to take what steps one can to counteract their effects. So long as atmospheric conditions are not troublesome, one can use an increased amount of amplification with beneficial results. My own preference is for an additional stage of low-frequency amplification, rather than for high. It is very much easier to add a note—magnifying stage, which may take the form of a small separate unit connected to the output terminals of the set. With the valves and the intervalve couplings that are available to-day, it is by no means difficult to obtain a low-frequency magnification in the neighbourhood of forty per stage. Though it has frequently been stated that the addition of low-frequency amplification does not increase the range of a set, this is actually far from being correct. In the past week, for example, I could hear absolutely nothing of Joenkeoping with one high-frequency valve, a gridleak rectifier and a single stage of note-magnification; the station might not have been there, for there was not a sign of his presence. The addition of a fourth valve, working as low-frequency amplifier, made the signals clearly audible at good telephone strength.

Shorter Waves More Reliable.

One of the best stations, during the rather poor period under review, has been Toulouse PTT, which on several evenings has come through with extraordinarily good strength. Speaking generally, the shorter waves have been less affected than the longer, and one has heard pretty well such stations as Kiel, Dortmund, Gleiwitz, and Muenster. Late at night, when interference is usually at a minimum, numbers of the Spanish stations have come through very well considering the circumstances. The majority of those appearing in the list in *World-Radio* are worth trying for at such times, Barcelona, San Sebastian, Cadiz, Bilbao, Seville, and the Madrid stations being amongst the best. Langenberg reception has been curiously weak of late, though Stuttgart, Leipzig, and Breslau continue to be good. Hamburg is uneven. On several evenings I have had Porsgrund better than Bergen, and the Lafayette station at Bordeaux has given respectable signals. Gothenberg has been receivable at times at fair strength, but Bern is not up to his usual reception form. Prague has occasionally shown something like his accustomed strength, but Bruenn I found usually rather faint. Brussels has not been affected to the same extent as other stations, and Witzleben continues to be a good signal. Toulouse Midi has been suffering from heterodyne troubles, and spark interference of a particularly powerful nature has often ruined the programmes of Frankfurt and Fredriksstad.

U. S. A. Notes

(From our New York Correspondent.)

Half Radio Stations to Go?

A plan for the reduction of the number of broadcasting stations in the United States from 733 to 364 has been submitted by the American Engineering Council to the Federal Radio Commission, which is now engaged in an attempt to solve the problems of the American radio field. Under the scheme there would be 64 national stations and 300 local stations. The national stations would operate in the band between 550 and 1,250 kilocycles—that is to say, from 240 metres to 545 metres. The local stations would be confined to the remaining lower range of the broadcasting band, from 150 kilocycles to 1,500 kilocycles, or from 240 down to 200 metres. The proposal has the support of many radio engineers and was worked out by the Radio Broadcasting Committee of the Engineering Council.

Baseball Broadcast Daily.

Radio has now taken over professional baseball. The games played each autumn by the winners

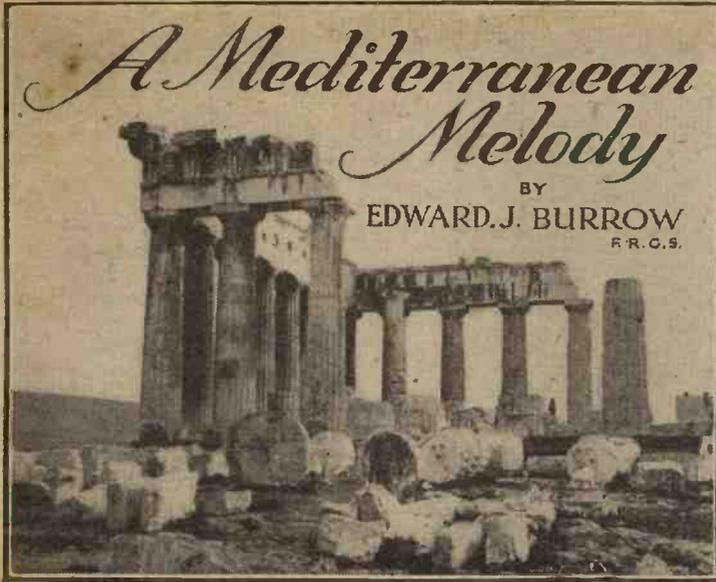
in the American League and the National League for the national championship have, of course, been broadcast, but now comes the announcement that Station WMAQ will broadcast all games played by the Chicago White Sox (American League) and the Chicago Cubs (National League) in Chicago daily during the season just opened.

S.M.G. I

The newly appointed Federal Radio Commission has received a tart letter from a fiery radio fan demanding that steps be taken immediately to eliminate static.

Round the World for Dinner.

Yale University's first "Round-the-World Dinner" will be held on April 20, Chief Justice William Howard Taft, of the U.S. Supreme Court, addressing members of the Yale alumni in nearly two hundred American and foreign cities, being enabled to do so by a "hook-up" of some eighteen stations. He will speak at the dinner given by Yale men in Washington, D.C. The dinner is to open a \$20,000,000 endowment campaign, and London, Paris, Honolulu and Tokio are cities at which Yale men gathered at dinner will listen.



MY first picture is of a Compagnie Transatlantique steamer ploughing her way across the blue-black waters of the Mediterranean. In the distance, faintly outlined against the sky, almost like a low-lying belt of clouds, shine the snowy peaks and shoulders of the mountains of North Africa.

On the fore-castle deck squats a motley crowd of Arabs, Jews, Kabyles, and swarthy Moors, picturesque in their burnouses, many of them evidently home-sick and sea-sick simultaneously. One of the Arabs rises and yawns, then, suddenly, as if impelled by some unseen force, breaks into song—a weird, barbaric melody, full of strange semitones and tinged with unimaginable sadness. Soon others take up the refrain; and the call of the desert expresses itself in a vague yearning, melodic theme, as if the sight of those distant mountain peaks had awakened memories of white-walled cities,



The First Sight of Africa.

green oases girt with waving palms, and the tinkle of the bracelets on the waving arms of Ouled Nail dancing-girls.

In, and through, and beyond the ship, its passengers, Europeans, Arabs, Moors, and Jews, and its crew, pulses the radio-energy of far-off stations; and on the upper deck, in the little wireless cabin, the valves of the receiver glow faintly in the semi-darkness, as the operator tunes into the opening

chords of an overture wherein, by a strange phantasy, the theme of the Arab song seems to be strangely woven into the fabric of the music, like a blood-red thread in an Eastern carpet.

Again, another scene, still on the Mediterranean, but in the Ægean Sea, comes to my mind. It had been a choppy, uncertain night, and, as I wake from a fitful slumber, the porthole of my cabin is just on a level with my eyes; and as the great heaving plane of the sea rises and falls from top to bottom, bottom to top, of the circle of vision, with the rocking of the swell, I see we are in a bay. The shore is not far distant; suddenly a shaft of sunlight breaks through the clouds somewhere, and, on a tiny hill, midway between the sea and a

majestic line of mountains, gleams the white colonnade of a wondrous Temple, poised, as it seems, between heaven and earth, in the effulgence of the morning light. And my blood thrills, as I call to mind that this morning we are in the Bay of Salamis, where the greatest sea-fight of ancient history was fought between Greeks and Persians; while those mountains are Olympus and Parnassus, and the abodes of the Immortals; and that gleaming marble temple is the Parthenon—the dream and inspiration of Pericles and Phidias, of old.

Later in the day I climb the majestic incline that leads through the great Propylium to the top of the Acropolis, and I see where Paul strove with the Athenian philosophers of his day, and understand something of the spirit of the men who designed this wonderful architecture—still beautiful in its ruin after more than twenty centuries have passed. Below is spread out modern Athens, a medley of streets and squares, as far as the eye can see; and it was down in that rather squalid city, before the day was over, I caught a faint whisper of Daventry, on a powerful receiver, and the boom of Big Ben blends strangely with the voices of a queer little band of Armenian refugees in the square outside, strumming on weird instruments, singing a sad, haunting, not uncomely, air. Yes! Again it is the air the Arabs had chanted on the fore-castle of that Algerian steamer: a little westernised, and with a tendency to settle into more sedate harmonies and fewer semitones, but the same soul-stirring, restless, barbaric theme, bringing a sensation of wild and primitive life into the commonplace atmosphere of modern Athens.

* * * *

My third picture is of the City of the Seven Hills—modern Rome. I have come up from Sicily, where the almond and cherry blossom flings its petals like snowflakes on the ground and the ice-clad peak of Etna shines magnificent in the spring sunshine, save where a pall of dusky smoke creeps over the rim of the crater and rolls down the mountain side.

As the train creeps across the broad plain of the Campagna, on the one hand are the towering arches of the aqueducts built by the Cæsars of

Rome's great days—mute monuments of her former splendour; on the other rise the masts and aerials of the broadcasting station of Rome, and over the roof-tops one can glimpse the towering mass of the Colosseum and the Arch of Constantine.

I have hurried northwards, to be present at a great orchestral concert in one of Rome's great concert-halls. The concert is to be broadcast, and I know that my friends in Sicily, the operators out on the Mediterranean, and many men and women in far-off towns and villages will hear the flood of melody that seems to pulse and throb, to swell and diminish at will, under the conductor's baton. As I sit there, entranced by the beauty of the orchestration, I find my mind once more recalls that haunting air—the song of the Arabs as their country hove into view on the horizon, the song of the exiled Armenians in the streets of Athens, and now the same melody, vibrating and wailing through countless variations and harmonies. A glance at the programme shows me *Scheherazade* (Rimsky-Korsakoff). Then I know at once where that great Russian culled the haunting melody of the pipe that introduces and bids farewell to the wonderful score—the very incarnation and spirit of the mingled savagery and sensuousness of the East.

* * * *

So comes it to pass that a great composer weaves the threads of musical romance, translates the crude themes of primitive man into the language of modern music, and radiates the themes back into the consciousness of those from whom came the original melody! Thus goes the wheel of melody full circle through the wonder of the wireless waves.



The Arch of Constantine and the Colosseum, Rome.

Broadcasting and Copyright.

(From our Vienna Correspondent.)

The interesting action brought in Vienna against the Ravag by the heirs of the German poet, Rudolf Baumbach, who died in 1905, claiming royalties on a 50 minutes' reading of Baumbach fairy tales, and further compensation for this infringement of copyright as permission was not previously obtained, has resulted in a verdict for the plaintiffs, though the Ravag has given notice of appeal. The claim is for 800 lines read, at 40 pfennigs, about fourpence, per line (the rate paid in Germany by stations which broadcast copyright works being from 30 to 59 pfennigs), making 320 marks, plus 300 for compensation, or 620 marks (£31) in all. The whole question of such copyright, especially as regards the works of deceased authors, is to be dealt with at the international congress in Rome next September.

Broadcasting and Languages.

EN BRETAGNE: LE PARDON.

Par E. M. STÉPHAN.

Si vous avez la bonne fortune de vous trouver dans un village breton à l'occasion de la fête annuelle, vous y verrez des choses que vous n'oublierez pas de si tôt, choses qui vous amuseront, ou qui, tout au moins, vous intéresseront.

Vous avez sans doute entendu parler des pardons bretons; peut-être avez-vous assisté à une de ces fêtes où se révèle dans tout son éclat, l'âme simple, naïve, mélancolique, et rêveuse des habitants de l'Armorique.

Le pardon est essentiellement une fête religieuse. La veille du pardon personne ne travaille, excepté les ménagères qui passent la journée entière dans la cuisine, car sachez-le, tout paysan qui se respecte tient table ouverte le jour du pardon. Les crêpes de froment, qui sont de rigueur à l'occasion de la fête, s'empilent sur les rayons du dressoir; les viandes qu'on servira froides le lendemain: bœuf, lard, jambon, andouilles et saucisses cuisent dans toutes les fermes. N'oubliez pas les "caillibotes," sans lesquelles il n'est pas de vrai pardon.

Aux environs du sanctuaire du Saint ou de la Sainte en l'honneur de qui se tient le pardon on a dressé d'immenses bûchers de branchages, d'ajoncs, de fougères, et de fagots. Quelques jeunes gens de bonne volonté ont fait le tour de la paroisse pour la "quête des fagots." Riches et pauvres contribuent selon leurs moyens, et donnent aux quêteurs, qui un, qui deux, qui trois fagots ou davantage. De sorte que les bûchers atteignent souvent des proportions assez respectables. On ne manque jamais de surmonter le bûcher d'une grande couronne de laurier ou de mousse piquée de fleurs.

L'allumage des bûchers se fait le soir, au chant des psaumes et des cantiques. C'est le curé de la paroisse qui généralement met le feu à ces bûchers. Le moment solennel c'est celui où les flammes atteignent la couronne et commencent de la brûler. Enfin elles s'attaquent aux cordes qui fixent la couronne à la perche; tous les yeux se lèvent, un silence de mort règne sur l'assemblée, tout le monde retient son haleine pendant cette terrible et courte lutte; mais, comme bien vous le pensez, les flammes triomphent, et la couronne s'effondre au milieu du bûcher. Alors une grande clameur s'élève, et les pèlerins se précipitent. On se fait un devoir d'emporter les tisons du bûcher, et de les garder soigneusement comme préservatifs contre la foudre et contre l'incendie.

Les moindres paroisses bretonnes ont leurs pardons; toutefois les "Grands Pardons" de Bretagne ne sont guère qu'au nombre de dix. En voici les principaux: le pardon de Saint Yves à Tréguier, celui de Notre-Dame de Bon-Secours à Guingamp; celui de Sainte Anne à Auray, celui de la Troménie à Locronan, celui de la Clarté à Perros-Guirec, celui de Notre-Dame de la Palud, et celui de Rumengol. La tradition veut, que pour assurer son salut éternel, tout dévot Breton ait entendu la messe, au moins une fois, à l'un des sanctuaires vénérés où se tiennent les "Grands Pardons."

Les jeunes filles de la paroisse n'ont pas manqué de décorer l'église de guirlandes et de fleurs; tout a été balayé et épousseté avec le plus grand soin; et dans les pays maritimes un peu de la poussière saorée, recueillie dans l'église du Saint, a été jeté aux quatre vents du ciel, de cette façon les habitants des îles seront sûrs d'une bonne traversée.

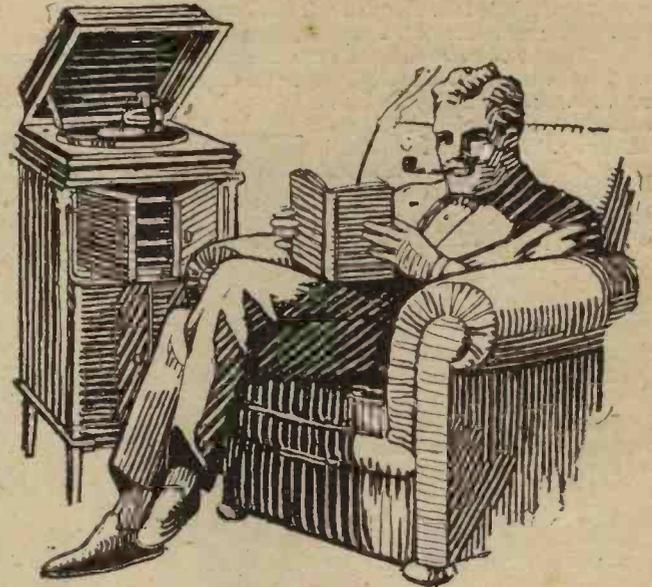
(Continued on page 402.)

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MAX PEMBERTON writes: "I would very warmly commend your records to all who are studying the languages in question. The great value is that the student can repeat them again and again. He will find at first that he hardly comprehends a word of them, but gradually his ear will attune itself and he will begin to acquire both accent and the ability to apprehend."

H. G. WELLS writes: "Your Lesson Records in French and Italian are admirable. You have made it possible for an attentive student with a very moderate expenditure of energy, and without a teacher of any sort, to understand spoken French and to speak it intelligibly. Nothing of the sort has ever been possible before."

COMPTON MACKENZIE, the well-known novelist, and Editor of "The Gramophone," writes: "So amusing is it to learn a language by this method that I was tempted to try Afrikaans; and in defiance of the thirty-six letters of the alphabet I shall certainly indulge myself in Russian when the course appears. The prospect is as pleasant as that of oysters coming into season."

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La plupart des pèlerins qu'on rencontre aux "Grands Pardons" sont étrangers à la paroisse ou à la ville. Ils viennent fréquemment de très loin, quelquefois de l'autre bout de la province. Toute la nuit l'église reste ouverte, et toute la nuit les bons pèlerins arrivent, les uns à pied, les autres à cheval, d'autres encore en voiture. Du plus loin qu'ils aperçoivent le sanctuaire, éclairé par la flambée d'innombrables cierges, ils se découvrent avec respect, et entonnent à pleins poumons le cantique du Saint Patron. Arrivés près de l'église, ils en font le tour en récitant à haute voix les prières d'usage. J'en ai vu, qui par esprit de pénitence, étaient leurs chaussures et, pieds nus, faisaient trois fois le tour du sanctuaire en égrenant leur chapelet; d'autres qui, à genoux, remontaient lentement jusqu'à l'autel en se frappant la poitrine, et en priant le Saint d'intercéder pour eux et pour leurs morts. Car, il faut vous dire que les morts ne s'oublient jamais en Bretagne. Dès qu'ils ont fini leurs dévotions, les pèlerins déposent leurs offrandes sur des tables disposées dans la nef et c'est généralement à faire dire des messes pour le repos des âmes, que ces offrandes sont destinées.

Beaucoup de pèlerins passent la nuit entière dans l'église à prier et à chanter des cantiques. Dès le petit matin les cloches se mettent en braule, et le pardon proprement dit commence. La matinée est consacrée à des exercices religieux. Tout le monde assiste à la grand' messe. Heureux ceux qui ont trouvé place dans le sanctuaire et qui pourront entendre le sermon. L'église est trop étroite pour la foule grouillante. On envahit le cimetière et la place, et on suit l'office du dehors. Mais on se console en pensant qu'on se rattrapera à la procession. C'est le clou de la fête. Tout le monde y prend part. Drapeaux, bannières, étendards flottent au vent. Les hommes et les jeunes gens portent les lourdes statues et les reliquaires, des petits garçons habillés en marins portent les bateaux, qui hier encore, pendaient à la voûte de l'église, des jeunes filles habillées de blanc portent l'image de la Vierge. Ce ne sont que prières et chants. Toute la foule s'y donne à cœur joie. A la limite du parcours se dresse un bûcher souvent plus grand que celui de la veille.

Ces pardons sont marqués par des superstitions dont quelques-unes sont en train de disparaître. Le clergé les interdit. Mais le Breton est païen dans le fond de son âme, et très fidèle aux coutumes de ses pères, et il continue à jeter des clous ou des épingles dans les fontaines sacrées: des clous pour se guérir de rhumatismes, et des épingles pour savoir s'il se mariera au cours de l'année.

Voilà quelques-uns des traits caractéristiques d'un pardon breton.

N.B.—Listeners are advised to provide themselves beforehand with paper and pencil, as a short dictation test in Spanish and two English sentences for translation will be given at the end of the talk.

The text of the dictated matter and the translation of the sentences will appear in the next issue of "World-Radio."

In order to encourage the study of languages, *World-Radio* will hold a foreign language essay competition, and will award for the best essays the following prizes:—

- 1st prize £50
- 2nd ,, £25
- 3rd ,, £10
- Five prizes of £1 each
- Twenty consolation prizes of 10s. each.



All the village takes part in the annual religious ceremonies. A Breton "Pardon."

The newsagents whose customers win any of the above prizes will also receive a prize of 10 per cent. of the amount received by the customer or customers.

There are no entrance fees.

The conditions will be found below.

CONDITIONS OF ENTRY.

- (1) Entries must be received not later than the first post on Saturday, October 1 next.
- (2) The competitor must hold the Post Office listener's licence.
- (3) He must have been a registered reader of *World-Radio* for at least 6 calendar months.
- (4) No member of the B.B.C. staff is eligible.
- (5) No competitor shall write the essay in his mother tongue.
- (6) Qualified competitors can select their subjects from a list of six which will be published in the issue of *World-Radio* dated Friday, July 1 next. The subjects announced will bear upon the talks given throughout the preceding period.
- (7) The decision of the Editor of *World-Radio* shall be final.
- (8) Entry into the competition involves acceptance of these conditions.

Note.—Registrations are accepted through bona-fide newsagents. Direct subscription can be accepted only in cases when the reader has no local newsagent.

USE THE REGISTRATION COUPON BELOW.

To the Editor *World-Radio*,
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Please register me as a regular reader of *World-Radio* and enrol my name for the Languages Essay Competition. I am studying the following languages:

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(Write in Capital Block Letters.)

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From Sea-bed to Aeroplane.

Those of our readers who on April 18 were fortunate enough to pick up the broadcast experiment from the Island of Sylt, when a diver spoke from the bottom of the sea to the pilot of an aeroplane circling above, may be interested to know some details of this experiment, which is the first of its kind that has ever been carried out.

All manner of "helping hands" were active to ensure the success of the experiment—cables, transmitter, receiver, minute wires, high aerial masts. The space between the speakers was infinitely larger than that from the sea-floor to the aeroplane. A great stretch of country and towns lay between them, for as the diver spoke into the microphone which was fixed in his helmet, his speech was carried through a cable to the stations of Kiel, Hamburg and Berlin, and by wireless to aeroplane. The diver was connected (a) to a boat by rubber tubing, which acted not only as air conductor, but also contained a telephone line; (b) by the receiver on the boat which terminated in one of the diver's headphones; and (c) the cable connection with the microphone in the diver's helmet.

The aeroplane carried a short-wave transmitter, working on a wavelength of 900 metres; its transmissions were picked up by the receiver on the boat and conveyed to the diver by head wires.

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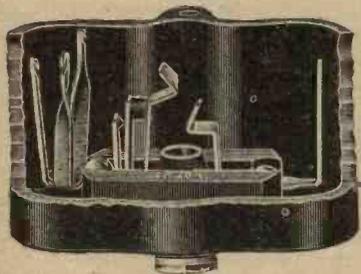
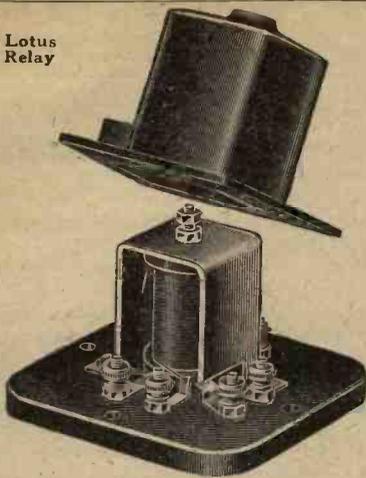
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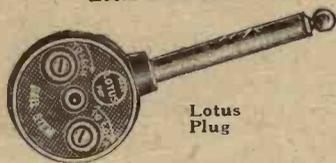
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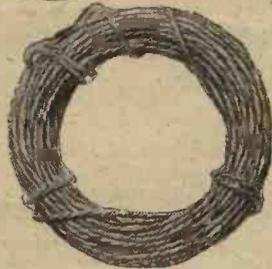
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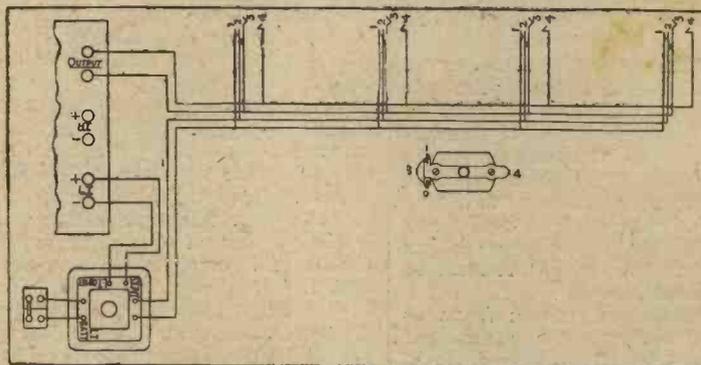
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By "DICTRON."

III.—Units of Measurement.

IN the preceding instalments we considered the three essential factors of a simple electric current and the application of Ohm's Law expressed in the formula:—

$$E=C \times R$$

where E=Electro-motive force,

C=Rate of flow of current,

R=The resistance of the circuit to the flow of current.

This is very valuable knowledge, but has no practical application in this form. It is of little use to know that the price of a commodity is proportionate to its weight. We only know its value proportionately. To know the actual value of the commodity we must be able to say that the price in shillings is proportionate to the weight in pounds, or that the price of the whole quantity is equal to the weight in pounds, multiplied by the price per pound in shillings.

The shilling and the pound are units of measurement, each applicable in its own particular scale of values and in no other sphere whatever. The effect of applying a unit of measurement to a scale other than its own is as meaningless as it would be to say that one had purchased two shillings of sugar at a price of one ounce. Similarly, there must be units of electrical measurement.

Units.—We have considered various forms of what may be termed stationary electricity or charged bodies. The first unit to be considered, then, is the unit of electrical quantity. This is called the "coulomb." To say that a certain body is charged with five coulombs of electricity implies something analogous to the statement that a tank contains five gallons of water. We shall not require to refer to the coulomb as a unit, since practically all the matters with which we are concerned relate to movement of electricity in various forms. Now we set this charge in motion and a fresh set of units are required to describe the manner and effect of its movements. We have talked of the rate of flow of current. If one were to pass a continuous flow of water through a pipe it would be observed that a greater number of gallons of water passed a certain point in the pipe during one hour than passed during one minute. The passage of electricity along a conductor takes place in a certain time and it, therefore, becomes necessary to take time into account. The unit of current is called the "ampère," and when one coulomb of electricity has passed a certain point in the circuit in one second it is said that a current of one ampère flows. The unit of electro-motive force is the volt. It is analogous to pounds pressure per square inch. The unit of resistance is the ohm.

Power and Work.

The unit of electrical power is the "watt," which is exactly parallel to the unit of mechanical power. It will be as well to consider the essential differences between "power" and "work." The amount of work which a man must do to push a wheelbarrow along a level path will depend upon two factors—namely, the force with which he pushes the barrow and the distance he has to push it.

A mechanical engineer says, therefore, that the two factors of work are force and distance, and he has evolved a unit known as the "foot-pound" to express the amount of work done when a force equal to a weight of one pound is exerted through a distance of one foot. A force equal to a weight of half a pound exerted through a distance of two feet is also equal to one foot-pound. Conversely, a force equal to a weight of four pounds exerted through a distance of three inches is equal to one foot-pound. This, then, is the definition of work.

Frequently one hears the same remarks applied to what is known as energy. Energy may be defined as the capacity for work, and can, therefore, only be measured as work either done or capable of

being done. The two terms "work" and "energy" may, therefore, be regarded as interchangeable and synonymous. Power, on the other hand, is defined by the engineer as the rate at which work can be accomplished or is accomplished.

A unit was evolved by James Watt, the pioneer of mechanical engineering and the first practical steam engineer, who assessed the power of a horse as being sufficient to accomplish continuously 33,000 foot-pounds of work per minute. This has been taken as a standard and is now universally accepted as the unit of mechanical power called "horse-power."

Electrical Power.

The relation between power and work should now be clear, and it should be obvious to the reader that there can be no power where there is no work done or to be done. Power is purely an expression of the rate at which work can be or is accomplished. It is simply a matter of observation of such modern conveniences as the tram and the electric railway to realise that work can be done by an electric current. If work can be done, then there must also be power. The work done in an electric circuit is the product of the electro-motive force and the current. Since, as we have already seen, the unit of current (i.e., the ampère) is assessed on a time basis, it is obvious that the power in any electrical circuit can be calculated by multiplying the electro-motive force expressed in volts, by the current expressed in ampères. Thus the current of two ampères at a pressure of five volts represents a power in the circuit of ten watts. The name of this unit of power is not its only association with the unit of mechanical power, since the electrical watt is merely a different-sized unit for expressing precisely the same physical quantity, just in the same way as a pint and a gallon are different-sized units for measuring the same physical quantity.

A watt is $\frac{1}{746}$ of a horse-power; thus we may say that the power represented by a current of 7.46 ampères at a pressure of 100 volts, being 746 watts, is equal to one horse-power.

A multiple of the unit "watt" to which we shall frequently refer in future articles of this series is the "kilowatt," which is the term used to express 1,000 watts.

There is also a unit of electrical "work." This is called a "joule" and is equal to the work done in one second by one watt, or may alternatively be expressed as being equal to 0.737 foot-pound.

There are other electrical units with which we shall need to be acquainted in the course of our study, but it will be best to leave the discussion of these until later.

(Continued from Column 3.)

The Yodellers.

I wonder how many English listeners have picked up Berne or Zurich on a Saturday night and heard the Swiss Yodellers in full song, an item well worth trying for if your set is able to reach these places.

In Switzerland nearly every little *chalet*, even in the smallest mountain hamlet, is supplied with electric light, and many a Swiss peasant works his valve set from his lighting main by using an alternating current adjuster.

Crystal sets are almost unknown in Switzerland, and would be very little use, as the Swiss stations are low powered, and the distance between each is much greater than is the case in England. In conclusion, let me say that, in my opinion, while broadcasting on the Continent is good, yet England still leads the way in the purity of transmissions, the general excellence of programmes, and the rigid punctuality with which the published time-tables are adhered to.

Continental Broadcasting.

By an Englishman on the Continent.

[The writer, who lives in the Swiss Alps at an altitude of 5,000 feet, and possesses a good 4-valve receiving set with an efficient aerial, records his impressions of the European stations heard by him.]

IN some ways Switzerland is almost ideally situated for the radio "fan," and all the Continental stations come in with very little trouble.

It might be supposed that the Alps, with their huge peaks encircling one, would have a very bad screening effect, but this is not the case; on the contrary, reception is exceedingly good. One disadvantage in this altitude is that during the summer months there is a terrible amount of "static" and, on occasions, terrific thunderstorms, which entail an immediate dash to the window to throw the aerial lead out to the garden.

Another fault that one notices is that amongst the Continental stations much fading occurs, but happily I find that this seldom happens to the Daventry transmission, which comes in splendidly. Some of the smaller English stations, such as Bournemouth, Cardiff, Newcastle, Glasgow, and even Aberdeen, can be made to work a loud speaker by using four valves, but are rather difficult to pick out from the higher-powered, less distant ones.

Recognising Stations.

At first, with so many stations to choose from, it was very difficult to identify announcements made in so many different languages, but one soon became familiar with the different announcers and their little peculiarities.

In addition, many of the stations have adopted distinctive signals which make them easier of recognition.

It is surprising how familiar the voices of the Continental announcers become after a while, one of the most distinctive being the Vienna gentleman with his slow, deliberate, and very pure German, and the peculiar trumpet effect before each announcement.

Again, the Italian announcers with the soft, liquid tones are quite unmistakable, yet for some time I was not at all certain as to whether they were men with very beautiful voices, or women. Berne has a lady announcer who always gives out each item in German and French; and Zurich's announcer with his gruff voice, whose *staccato* "Allo Zurich!" is easily understood.

"Hallo! Praha!"

The Prague station is, I believe, quite familiar to English listeners with his "Hallo! Praha!"; but I doubt whether Brunn, also in Czecho-Slovakia, is quite so well known, although I consider it one of the best in Europe. I remember the first time I picked up Brunn I heard, much to my astonishment, a Russian Balalaika orchestra playing "It's a long way to Tipperary," with great verve and vigour.

Another night I tuned in to another station, which shall be nameless, and found them doing the *Geisha*, and heard "Shack's ze poy for vork" and "Sheep ahoy! Shak's shust ze poy," which sounded very quaint to English ears.

Most of the Continental stations give lessons in English, a very popular language out here, and many teach Esperanto for at least one night a week.

From the German stations one hears some very fine brass band music, and some of the old German folk songs sung by unaccompanied male voices are very beautiful.

I expect that Langenberg, their new high-power station, can be easily picked out in England, and out here it does not seem to interfere with smaller-powered ones, a fact which surprised me not a little.

Before the change in wavelengths on the Geneva plan the Spanish stations came in with great strength and purity, especially Barcelona, but now for some reason or other they can be picked up only with great difficulty.

(Continued at foot of Column 2.)

“Via Ether.”

WHEN tuning-in to Frankfort-on-Main the other night I was at first under the impression that I had picked up a relay of an outside broadcast, but, after listening for about five minutes, realised that it was a studio transmission in the presence of a large audience. What was advertised as a request programme turned out to be a very excellent presentation of the true Continental cabaret, complete with *conférencier*. Now this individual, in Germany especially, is more than the old-time chairman of the music hall, for not only does he actually introduce the different artists to the audience, as, perhaps, might an announcer, but he is given full liberty to make observations of a nature calculated to put the house in good humour. The performances consist as a rule of vocal numbers, comic turns, short sketches, even thrillers; and the different items are interwoven by the *conférencier*, a man who is capable of extemporisation, and who between the consecutive items holds the audience amused with a sort of “carpenter’s act,” that species of entertainment in front of the curtain which gives the stage hands time to set the next scene. I must say that on these evenings when such a performance is given by the Continental broadcasting stations, except by calibration, it is difficult to identify the transmitter, for in no case are details given in the programme. Such cabarets also are very popular with the Swedes, and on many occasions you may hear them from the Stockholm station.

* * *

Koenigsberg of recent date has been connected to its Municipal Theatre, and, according to the programmes, has taken considerable advantage of the very excellent performances which are being given there. On Sunday, April 24, at 7.30 p.m., the studio will relay Tschaikevsky’s three act opera *Pique Dame*. On the same evening Vienna will give you a revival of *If I Were King*, by Adam. The Vienna station, by the way, has now concluded arrangements for the relay of several performances from the State Opera House, and on April 26 will give you an opportunity of listening to Dr. Richard Strauss’s *Woman without a Shadow* (“Die Frau ohne Schatten”); on April 30 it will relay from the same theatre Verdi’s opera *Falstaff*.

* * *

As a rule, on Sundays, I devote the interval between 6 and 8 p.m. to the search of broadcasters which, in the ordinary way, are difficult to hear when our home stations are in operation. Usually, I turn to my super-het. as soon as the London station has temporarily closed down. But to say that listening in these circumstances is pleasant would be stretching the long bow to its fullest extent, for during that “silent” period—silent as regards the B.B.C. only—it is possible to hear every description of noise which can be produced by wireless receivers. No matter which station you tune in, be it on a high, medium, or low wave, you will find reception accompanied by howls, whistles, gurgles, hums, and

buzzes, to which is generally added a fair amount of mush, and the eternal spark transmissions. Turn to Hamburg, Frankfort, Brünn, Milan, or any other transmitter, you pick up speech and music, and straining your ears to decipher the words, you are immediately interrupted by all the Ham Handed Henrys and Oscillating Oscars of your and other neighbourhoods. They buzz around your station as do wasps around a honey-pot, with the difference that unfortunately they never settle on that pot for one single moment! Apparently every owner of a wireless receiver, be he licensed or not, be he the possessor of an anæmic single valver, or of a 60 h.p. super-het., is on the warpath. Everybody is reaching out, some successfully, most of them in vain, and the little chap with his fierce reaction on the aerial twirls his condensers in the hope of ultimately getting something. (If he got what he deserved many of us would feel satisfied!) Is it not a curious fact that, notwithstanding all the informative articles regularly published in radio journals, these inveterate oscillators cannot grasp that when their receiver is in this state of violent oscillation, not only do they spoil the reception of stations for many more serious amateurs, but that they prevent themselves from satisfactorily hearing any transmission?

* * *

For the reasons given, it is obvious that, notwithstanding the desire of some for a silent period on the part of home stations, any advantage which in theory might be derived from these few hours would be seriously counteracted by the oscillators in question. So long as it is not understood that oscillation affects all listeners alike, so long is the advantage of a silent period for the purposes of hearing distant transmissions a negative one. Personally, I find these Sunday hours useful only for logging the stations which I decide to tune in at other times; as to enjoying their broadcasts—well, it is an impossibility in the present circumstances.

* * *

If, as we have always been told, the looker-on sees most of the game, the eavesdropper—or wireless enthusiast—may be said to hear most of that which takes place in the ether. There can be but few transmissions made in Europe which are not received by some listener or other in the British Isles, and almost nightly new stars are discovered in the radio firmament. The new comer, in this instance, hails from Lisbon, Portugal, and on a recent date a concert programme was picked up by one of our readers on a wavelength of about 303 metres. The call was definitely identified as Lisbon, and the letters as heard were PIAA. This is interesting news, inasmuch as although for some months I have not been told of broadcasting developments in Portugal, at the beginning of the year information reached me to the effect that the Portuguese Government proposed to instal a small transmitter in the capita]

(Continued on page 409.)

This Plan Will Bring You £250 A YEAR FOR LIFE—FROM AGE 55

Ninety-nine men out of a hundred have to provide for their own future. They have no rich relative to take the burden from their shoulders, and no business pension scheme to fall back upon. They stand or fall on their own efforts.

Are you satisfied with the progress you yourself are making? Have you saved anything like enough to justify a belief that at 55 years of age you will be in a position to take things easier? What about your family, should you, the breadwinner, be taken from them? The plan about to be explained will, if adopted without further delay, relieve you of all anxiety about the matter.

It is the best, the easiest, and the surest way of providing both for your own later years and for your dependents.

Assuming your age to be 35 and you would like to provide for a private income of £250 a year for life commencing at 55, this is how the plan works out. You make the yearly or half-yearly deposits to the Sun Life of Canada (the great Annuity Co.) of an agreed sum. And this is what you will get in return.

£250 a Year for Life.

At 55 years of age the Sun Life of Canada will start paying you an income for life of a fixed sum—about £250 per annum—and you’ll receive this income every year as long as you live. Or, if you prefer it, you can have a cash sum down of about £3,000. Of course, you haven’t deposited anything like that sum. It’s the profits that make it so large—profits heaped upon profits accumulated over the entire period of the arrangement.

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For every deposit you make you receive rebate of Income Tax—a concession which will save you nearly £250 during the period, assuming the present rate of tax to continue. This is additional profit on the transaction.

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If through illness or accident you lose the power to earn a living, and the disability is permanent, you are excused from making any further deposits, and £20 per month will be paid to you until the £250 a year for life becomes due.

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Should you not live to the age of 55, £2,000 will be paid to your family, and, in addition, half of every deposit you had made to date. If death result from accident, the sum would be increased to £4,000 plus half the deposits.

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Though 55, and £250 a year for life has been quoted here, the plan applies at any age and for any amount. Whatever your income, if you can spare something out of it for your and your family’s future, this plan is the best and most profitable method you can adopt.

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The Sun Life of Canada has assets of over £70,000,000, which are under Government supervision. It is in an impregnable position. Do not, therefore, hesitate to send for particulars of this plan, which may mean great things for you and yours.

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Dominion and Foreign Broadcasting Intelligence

CANADA

(From our Montreal Correspondent.)

100 Miles for a Radio Message.

The interest taken in world affairs by those who work in the Grenfell Mission in Labrador has been considerably quickened by the installation of radio receiving-sets which bring them the news of the day as well as personal messages. That they fully appreciated the messages that were broadcast in the middle of January from Station KDKA is shown by the receipt of a letter from the Northwest River, Labrador, to the Canadian Westinghouse Company, Montreal. "I wish that you might have seen the group ranged around the loud-speaker in the Social room of the small hospital here on last Saturday night, January 15, awaiting the messages to the Far North which you so kindly arranged to be broadcast," the writer says. "Our staff group was there, doctor, dentist, nurse, and teachers, and a dozen or more trappers who were in from their fur paths, some of them having come for a hundred miles by foot over snowy wastes and through forests."

The Wavelength Problem.

Commenting on a dispatch reported to have been sent out from Washington to the effect that the Federal Radio Commission notified the country's radio users that for the present the limitations of wavelength bands will be unchanged, Mr. Alex Johnston, Canada's Deputy Minister of Marine, said: "I do not believe the dispatch is accurate. We were given every assurance at Washington that operating on the six wavelengths assigned to Canada would cease, and we have no reason to believe the Commission has changed its mind." The Canadian problem is said by members of the Federal Radio Commission to be one of the most difficult the Commission has to solve. The last negotiations ended about a month ago. They will be reopened in the near future.

SOUTH AFRICA

Death of Mr. A. N. Dickson, of Capetown Station.

We regret to record the death, on the 4th inst., of Mr. A. N. Dickson, formerly of Nottingham, Director of the Capetown Broadcasting Station, and Business Manager of the Capetown Municipal Orchestra. In the latter capacity he came to London in May, 1925, when the Capetown Orchestra broadcast from the 2LO studio.

AUSTRIA

(From our Vienna Correspondent.)

Competitive Wireless-Picture Systems.

Professor Ludwig Tschoerner, whose experiments in transmission of pictures by telegraph were attracting world-wide attention before the Great War, has now come before the public again with a "simple and inexpensive" outfit for wireless picture transmission in which he has been assisted by the radio expert, Herr Friedrich Horny. He claims

that his apparatus is far cheaper, and relatively more efficient, than any that has yet been used. The first semi-public demonstration will be given here in a few weeks. Since 1908 he has been working hard at his inventions, and latterly has concentrated his efforts on the "Fernkino," or wireless cinema. The enormous difficulties of the problem of transmitting moving pictures, which so many

"May Day."

Sunday, May 1, will be celebrated with especial enthusiasm in Vienna as "Labour Day." When it falls on a weekday, it is observed here more rigorously as a day of rest than any Sunday, no tramcars being allowed to run till the afternoon, and all shops being kept closed. It being on Sunday this year, the business world will be less inconvenienced than usual. Labour Day is a statutory national holiday and festival. The Vienna Symphony Orchestra will give a special concert in the morning, in the Ravag studio, and the ceremonial in the afternoon will be broadcast, including the declamation of "Liberty" poetry by distinguished actors and actresses. On Saturday, April 30, Verdi's *Falstaff* will be relayed from the State Opera.

Next Week's Programmes.

On Sunday, April 24, the day of the General Election in Austria, the feature of the Ravag evening programme will be a performance of Granichstaedten's operetta, *Der Orlow*, in the studio at 8 p.m. At 5.35 there will be a jazz band concert, to cheer Austria up after a day of rigid abstinence, so far as the sale of liquor is concerned, for there is prohibition in Austria only on election days. Sil Vara's *Woman of Forty*, a play adapted from a British novel by Hubert Wales, will be given in the Ravag studio on Friday, April 29. There is no Summer Time in Austria, as the farmers object to getting up unnecessarily early in the morning, and say that it doesn't suit their cows and pigs either, so that London time is now, since April 10, the same as Vienna time.

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DENMARK

(From our Copenhagen Correspondent.)

Danish Relays.

A week or two ago the erection of a new relay station in Glostrup, some miles from Copenhagen, was finished. The station belongs to the Danish Post Office, and has two receiving sets, one for long waves and the other for short waves. In Denmark retransmissions from foreign stations—usually Daventry and Königswusterhausen—are

arranged several times every week, and the results obtained so far have been good. The English Boat Race was retransmitted with comparatively good results, and Danish listeners were much interested in the contest. The relay station has three different aerials, two for directional work—namely, a Beverage aerial, similar to that of Keston, and a Bellini-Tosi—as well as a third for general purposes.

GERMANY

(From a Correspondent.)

April 1 "Leg-Pulls."

As is customary in Germany the morning after—or, in the case of a weekly newspaper, the week after—the *Deutsche Rundfunk*, the most prominent offender in this respect, has confessed its many wireless sins on the first of April. It appears that quite a lot of its readers were taken in by its various

Foreign Radio Humour

U.S.A.



THE MAN WHO MARRIED A WIDOW.

[Bronx Home News, New York.]

inventors are tackling with all their might at the present time, are certain to be surmounted very soon, and Professor Tschoerner confidently hopes to be the winner in this competition, which will revolutionise the picture palace throughout the world. At the beginning of the World War, Professor Tschoerner perfected a telegraphic plan and map-drawing apparatus, of which the Austrian War Office ordered a number of copies, and the German War Office ordered 200. He has visited America to show his invention to experts. The Austrian public has heard very little of him for some years, but his latest invention has brought him at once into the forefront of popular and scientific interest. Captain Fulton is now back in Vienna, hard at work on experiments with his new apparatus for wireless picture transmission in the laboratory of the Telegraph Company here, and he intends to make some very interesting semi-public demonstrations shortly.

April jokes, and most by the account of the new Rhineland station, which was exposed in your last week's issue, and which we are now informed "ins Wasser gefallen ist"—or, in other words, has been liquidated. Hardly fewer were the enquiries by letter and telephone concerning another sensational affair reported on the same date—the collapse of one of the masts at the great Nauen wireless station. This terrible incident, which fortunately caused no loss of life or material damage, seems to have resulted in some little reflection upon a local rabbit-shooter, who still sturdily maintains—and in this he is supported by the *Deutsche Rundfunk*—that the shot he let off at the moment of the collapse of the mast was in no way responsible for its fall. In fact, the paper admits that the whole story was its own artful invention. The masts at Nauen are doing well, as usual, the photographs reproduced by the paper relating to an accident caused by a storm during alterations fifteen years ago.

American Methods of Reception.

The views expressed by Captain Eckersley on the subject of sane reception of distant stations receives striking confirmation in an interview published by a Berlin evening newspaper with a prominent member of the German industry, lately returned from America. This representative calls attention to the system of joining several high-frequency stages so that they may be easily worked by a single control. The American sets he finds extraordinarily selective—a quality which is particularly necessary in the States, and especially in New York City, with its thirty-odd transmitting stations. The surprisingly simple "hook-ups," however, prove equal to the task set them. He finds, however, that they are very dear. He does not agree with the abandonment by Americans of the horn loud speaker, which he attributes to the exaggerated importance attached to reproduction of the deeper tones, but is definitely of the opinion that America is showing the way in "sane reaching-out." This is the opinion of the trade in general here. One of the biggest retail dealers in the City told me the other day that he confidently anticipated that in two or three years' time, if not less, there would be only multi-valve sets in Germany. At present, his business is still largely in crystal and other simple detector apparatus.

New Stations.

It is intended to build a new relay station at Augsburg, which will use a common wavelength. A new station is also projected in the neighbourhood of Cologne, which will use Dortmund's wavelength. Berlin Witzleben is to increase its power to 10 kw., or 5 kw. in the aerial.

ITALY

San Marino Convention.

It is interesting to hear that a Convention has recently been concluded between Italy and the small mountain republic of San Marino, which is in the heart of the kingdom. This Convention provides for the concession to Italy of the right to erect wireless telegraphic stations inside the boundaries of the San Marino Republic.

LITHUANIA

Wireless Progress in Kovno.

The first sitting of the Exploitation Commission of the Kaunas (Kovno) Wireless Station to examine the activities of the station took place recently. Owing to lack of resources it has not been possible to develop the wireless programme. The number of registered subscribers in Lithuania, at present, is 1,500, of whom 1,000 are in Kovno. Notwithstanding the regulations, there are still many unregistered sets. It is estimated that the total number of such apparatus is 10,000. On the basis of the recent Cabinet decision, 75 per cent. of the receipts from the working of wireless is assigned to the radio programme. The Commission therefore intends to undertake measures for the registration of all radio apparatus. Strict control will be enforced and those who fail to register in time will be fined.

All apparatus and wireless parts sold to the public will be registered. It is proposed to transmit periodically through the Kovno station the more interesting programmes of the chief European stations.

SPAIN

British Navy Broadcast.

On the night of March 30, Radio Barcelona broadcast the choir of H.M.S. *Barham*, who came ashore and visited the studio for the purpose. This choir consists of sixteen men, under the conductorship of Wireless Operator A. Brooks. The programme consisted of "The Sailors' Chorus," "Lovely Night," "An Evening Pastoral," "In Absence," "The Soldier's Farewell," "The Long Day Closes," and concluded with "God Save the King." The fine vocal product of this choir, says *Radio Barcelona*, which makes up in quality what it lacks in numbers, evoked much interest. Its style is called "de capilla," and recalls what may be observed of the Russian choirs and of other lands of the North, where the *fortissimo* of Spanish singers is unknown. This ship's choir was formed in October, 1926, and has sung in various ports of the Mediterranean, but, according to Mr. Brooks, it is the first time that it has sung into the microphone. So great a success was the broadcast that at the request of numerous listeners the crew gave a repeat concert in the open air on April 2. Letters of appreciation were received from all parts of Spain, as well as Great Britain and elsewhere.

Bilbao EAJ9.

Bilbao, having been improved, recently started operations, and admirable results were obtained from tests with Barcelona and Madrid. These rebroadcasts will coincide with Union Radio's time table—that is, from 10 to 11 p.m. on alternate days; while from 9.30 to 10 on the intermediate days will be devoted to the local programme. Prominent persons in Bilbao were actively interested in the formation of Bilbao Union Radio, and listeners of standing have offered their most

enthusiastic support. The rebroadcasts from EAJ7 Madrid, in conjunction with Union Radio's regional stations, will be the principal feature of the weekly programmes, which are of much interest to crystal set listeners in the distant provinces.

Additions to the Union Radio Group.

Union Radio, following up their plan of a unified transmission for Madrid, have now reached, according to their journal *Ondas*, a friendly agreement with Radio Iberica and Radio Madrileña, and only await official recognition to merge the Madrid stations in one.

Still Hope for the "Highbrows."

"The day has almost arrived," said the President of the National Broadcasting Company of America, in a recent address, "when broadcasting will have no more worlds to conquer in the field of musical achievement. We cannot put on the air stars greater than the greatest operatic singers which the world now knows." Studies being made by the National Broadcasting Company, he declared, are upsetting some time-honoured theories as to public taste. "Exalted critics who foresee the intellectual doom of the nation because of what they claim to be the great preponderance of 'lowbrows' over 'highbrows' might be led to dry their tears by our own discoveries," he said. "We find that it does not require a college or musical education to appreciate the best in music and entertainment by broadcasting; that both those in the cities and those in isolated country districts, that poor and rich alike, enjoy the best which we can bring into their homes. Lack of opportunity to hear the best in music, we find, rather than marked distinctions of taste, has held back general musical appreciation in the past. In so far as broadcasting is able to reflect a high standard of musical, educational, and cultural influences, it is destined to be a most beneficent influence for the entire country."

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purchase of Colvern Coils, which, being correctly designed for particular requirements, represent the highest efficiency at an economical price.

Issued FREE upon receipt of three halfpenny stamps, this free booklet gives the fullest information on coils for modern receiving circuits. It covers the use of Split Primary, Split Secondary, Tapped Secondary and Reinartz Coils, giving diagrams and pin connections for each type.

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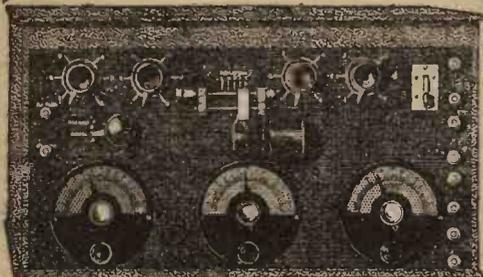
Particular notice should be taken by experimenters of the new Colvern Interchangeable Primary.

Copies of this booklet are to be obtained from Messrs. Collinson Precision Screw Co., Ltd., Provost Works, Macdonald Road, Walthamstow, E. 17. ADVT.



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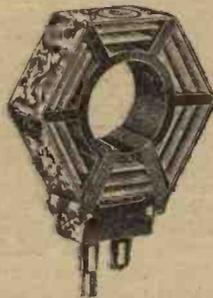


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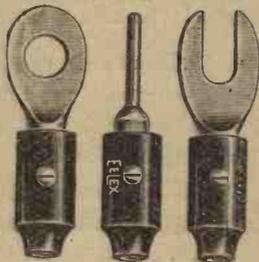
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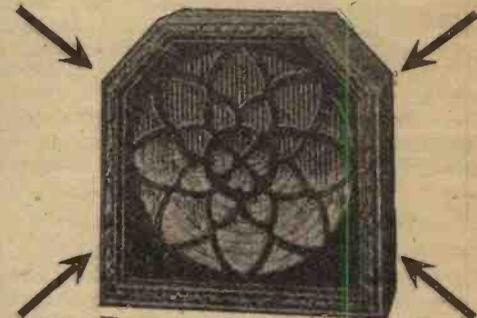
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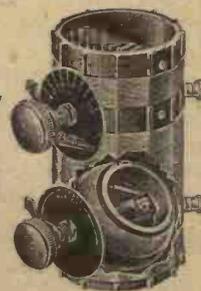
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(Continued from page 405.)

with a view to the dissemination of official, political, and news bulletins. To these would be added musical and other entertainments provided by a group of wireless enthusiasts. If I remember rightly, an exclusive wavelength of 267.8 metres was actually allotted to the projected transmitter by Geneva. Apparently, the station is now in operation, and it would be interesting to know whether any of our other readers have picked up its programmes. So far as I know the power of the station is about 500 watts, but there is no reason why, under favourable conditions and with a suitable set, we should not receive it at fair strength. I understand that Lisbon starts operations at about 10 p.m., as is customary with some of the Spaniards.

* * *

It is equally interesting to learn that one of our Middlesbrough readers picked up a telephony transmission which doubtless must be one of the greatest feats in the history of broadcasting. The Phillips experimental short wave transmitter at Eindhoven (Holland) on April 7 last was successful in bridging the distance separating the British Isles from the Australian Continent, and reception was so good that two of the Sydney (New South Wales) stations rebroadcast the short concert put over the ether for these tests. For fully two and a half hours our correspondent appears to have held the Dutch transmission, and logged successively, at 9.30 p.m., dance music, piano and mandoline solos. At about 11.30 p.m. an announcement in English was made to this effect: "Hello! Station 2BO [?]. We are very interested to hear of your rebroadcasting this station; we hope you are hearing us well. We send greetings to all Australian listeners." The call was PCJJ, and the wavelength in the neighbourhood of 30 metres. As a wireless relay it must have caused some sensation "down under"!

* * *

With the advent of spring, we may expect to hear from the Continental stations an increasing number of outside broadcasts. From a broadcasting aspect, much more use, on the Continent, is made of the local zoological gardens than on this side of the Channel. I am not at this moment referring to the special stunts recently offered to us from menageries, but to the pleasure gardens which in most cities such as Berlin, Amsterdam, or Hamburg, attract numerous visitors on fine evenings, and in which military or other bands give nightly performances. Most of the broadcasting concerns abroad have permanently installed microphones in these places. Hilversum, for an example, gives you a concert from the Amsterdam Zoo every Sunday afternoon. Within the next few weeks, from Berlin, via Koenigswusterhausen, you will be able to hear similar entertainments. There is, of course, a possibility that at some inopportune moment, say, in the middle of a ballad sung by a soprano, you may hear the roaring of a hungry lion, should the performance coincide with its feeding time. In that case, you would require no call sign to enable you to identify the broadcaster!

JAY COOTE.

Which Station Was That?

ANSWERS TO CORRESPONDENTS

Kilocyte (Middlesbrough): Phillips experimental transmitter Eindhoven (Holland). Billmac: (1) probably Le Bourget Aerodrome (France); (2) Belgrade (1,650 m.) testing. Careful (York): Motala, relaying Stockholm, *The Flying Dutchman* (Wagner). Programme advertised for 7/4, was altered to 8/4. F.G.N. (Reading): Belgrade (1,650 m.) testing. Abbeytonian: Radio Espana, Madrid (EAJ2). R. S. T. (Grantham): Surely Koenigswusterhausen relaying Berlin. Derek (Guildford): Motala, relaying Stockholm, *The Flying Dutchman* (Wagner). Programme advertised for 7th inst. was altered to 8th. Parkin (Nottingham): (1) WL. must be wrong, cannot trace; (2) if 2BC amateur (Manchester). 3 Vavur (Camborne): Motala, relaying Stockholm, *The Flying Dutchman* (Wagner). Programme advertised for 7th inst. was altered to 8th. Bill Eden (Devon): Radio Espana, Madrid (EAJ2). Tally: (1) Milan, (2) Boden, relaying Stockholm, *The Flying Dutchman* (Wagner). Programme advertised for 7th inst. was altered to 8th. (3) Motala (1,304 m.) relaying Stockholm. Eral (Manchester): Item not given in programmes, but presumably Hamburg, relay from Café Wallhof in that city. R3 (Hexham): (1) Motala (1,304 m.) relaying Stockholm, (2) Boden (1,200 m.) relaying Stockholm, *The Flying Dutchman* (Wagner). Programme advertised for 7th inst. was altered to 8th. (3) Kovno. Sizaire-Berwick: (a) Possibly Belgrade testing; (b) Munich; (c) Barcelona (EAJ1). G. Turner (Taunton): Some trouble occurred with the headline between Eastbourne and London, and engineers changed over to another one. Jason (Malton): 5,260 m. W. K. Bell (Newton Abbot): Motala, the Swedish H.P. station on 1,304.5 m., relays the Stockholm programmes; when in regular operation will entirely replace Karlsborg. W.H.D. (South Chingford): Indication of WL. too vague; possibly Radio Paris, which gives a transmission at that time. Curious (Birmingham): Koenigswusterhausen, relaying Berlin. J. J. Woods (Gloucester): 6RL, R. Gregson, 2, Laurel Avenue, Blackpool. A.H.M. (Sheffield): Barcelona (EAJ1). Coupon must be sent for each enquiry. K.X.X.27: Leningrad. S.W.17 (Liverpool): (1) Cannot trace, apparently a test; (2) believed to be Lisbon (Portugal) testing on about 303 metres. Philiad (Harrow): If Spanish, Cartagena (EAJ16). Hopeful Novice (Acton): J.N. (Reading): Briermount; Smugger (Shalford): Cardiff. Relay of Presbyterian church service. Not advertised in programmes. Disabled (Hampton Wick): (1) a relay of Stockholm, possibly Karlskrona (196 m.); (2) Cardiff. Relay of Presbyterian church service. Not advertised in programmes. Disclose (Wandsworth): Bilbao (EAJ11). P. S. Verity (Golwyn Bay): Warsaw (1,111 m.). W. H. (North Lincs.): Yes, Hilversum. Spain (Kent): Cardiff. Relay of Presbyterian Church Service. Not advertised in programmes. Buzzer (Chester): Warsaw (1,111 m.). R. H. J. (Blackgang): Cardiff. Relay of Presbyterian Church Service. Not advertised in programmes. A. L. S. (Hucknall): If p.m. cannot trace, if a.m. possibly WGBS (New York). Radio Bugg (Tottenham): Possibly Radio Paris testing. 2 Valve (Bredon): Scheveningen-Haven, Holland (1,950 m.), news only. Verulam: Cardiff. Relay of Presbyterian Church Service. Not advertised in programmes. Horsey (Newark): Juan-les-Pins (230 m.). B. MacLeod (Hastings): Indication of WL. much too vague; regret, cannot trace. Black Eagle (Hastings): Yes, Radio Agen. Mudlark: (11.50 a.m.) Motala, relaying Stockholm; (11 p.m.) Madrid (EAJ7). Pup (Peterborough): Yes, Bilbao (EAJ11). G. P. S. (Halifax): Marseilles PTT, relaying PTT Paris. Major H. F. Godington (Southsea): Hamburg (relay of foreign stations). Kester (Sewmoaks): Item not in programmes; if WL. correct, Berlin (483 m.). K. Carnoustie: Motala (1,304 m.) relaying Stockholm. 2,000 Ohms: (1) Yes, Scheveningen-Haven (news only); (2) no time stated, possibly Radio Paris testing; (3) Koenigswusterhausen (Press) 2,525 m. Triple Rheostat (St. Missenden): Cardiff. Relay of Presbyterian Church Service. Not advertised in programmes.

NOTE.

Readers desiring a postal reply should enclose a postal order for sixpence and a STAMPED ADDRESSED ENVELOPE in addition to the coupon. Those who wish to take advantage of our free service by means of these columns must give a NOM DE PLUME, in addition to their own name and address. PROPRIETARY TRADE NAMES MUST NOT BE USED AS NOMS DE PLUME.

WORLD-RADIO (No. 90).

For replies to questions concerning the identity of stations heard, this coupon should be cut out and forwarded, together with particulars, written on a separate sheet of paper, to Editor, *World-Radio*, Savoy Hill, London, W.C. Particulars should include: Date and time, approximate wavelength, call (if heard), fading or not, signal strength, and details of programme. N.B.—Each inquiry must be accompanied by a separate coupon.

"Which Station Was That?"

The New Alternative Postal Service.

In response to numerous requests, whilst retaining in *World-Radio* the usual free published service of "Which Station Was That?" we have decided to initiate a paid postal service, which, we are confident, will enable a reply to be posted within forty-eight hours of our reception of a "Which Station Was That?" coupon.

The conditions are as follows:—

A charge of sixpence, payable by postal order or in postage stamps, will be made for each query specially answered by post; but six queries may be sent for a fee of 2s. 6d. Stamped addressed envelope must be sent, and each query should be accompanied by the coupon published in "World-

Radio." All queries should be numbered, in order to facilitate reply. Letters must be addressed to the Editor, "World-Radio," Savoy Hill, London, W.C.2; envelopes to be marked in left-hand top corner "Postal Query Service."

If, owing to paucity of details submitted, or for any other adequate reason, the transmission cannot be identified, a further query will be answered free of charge. In this event, the answer form sent to the reader must be returned with the new application.

We are convinced that this alternative postal service will be found of considerable interest to many readers who desire an earlier reply to their enquiries than can possibly be given by publication in a weekly journal.

Note.—In the event of queries received in which readers have not complied with the conditions published, replies will not be sent by post, but will be found at the foot of these columns.

Correspondence

Identifying Foreign Stations.

SIR,—Since many listeners find it difficult to identify foreign stations, the following system may help them in their search.

The majority of foreign stations have a daily time-signal which is noted in *World-Radio*.

When a time-signal is heard from an unknown station, the difference between the time indicated by the signal and Greenwich Mean Time should be accurately noted.

Every degree of longitude on a map corresponds to four minutes. Therefore, having found the difference between the time at the unknown station and at Greenwich, it can easily be found whether the station be East or West of England, and its approximate distance therefrom.

Example.—A clock is heard from an unknown station of wavelength between 400 and 440 metres. Time is 30 minutes in advance of Greenwich. Since time is fast, the station is East of England.

$$30 \text{ (minutes)} = 7\frac{1}{2}^\circ \text{ E.}$$

$$4 \text{ (minutes per degree, long.)} = 7\frac{1}{2}^\circ \text{ E.}$$

Therefore the station is $7^\circ 30'$ E. of Greenwich. Then by finding the meridian $7^\circ 30'$ east of Greenwich it is found that Berne, Switzerland, is the only station corresponding to the details.

I trust that this system may be of use to your readers.

PHILIP H. R. GHEY.

62, Whiteford Road, Plymouth.

[Due allowance must be made for the change from Greenwich Mean Time to British Summer Time.—Ed.]

Battersea and District (B.M.I.) Radio Society:

SIR,—May we ask the favour of space in the columns of your paper to draw the attention of your readers to the Summer Term of wireless lectures to be given at the above Institute on Tuesdays and Wednesdays (7.45 p.m. to 9.45 p.m.), beginning on April 26, when new members are cordially invited to join? Enrolment takes place on Monday evening, April 25, and throughout the first two weeks of the term. There are three separate courses, as follows:—

1. A new elementary class for beginners is being formed for theory and practice. (The syllabus is based on the series of articles entitled "Wireless Step by Step," published weekly in *World Radio*);
2. An intermediate class for theoretical electricity, magnetism, and wireless reception, including practical work and morse practice;
3. An advanced class for the study of short-wave reception and transmission, theory and practice, morse, and reception of foreign stations.

The subscription is one shilling per term (no extras). Further particulars may be had on application to the undersigned.

A. F. HEMBURY (Hon. Sec.).

57, Winstead Street, Battersea. S.W. 11.

(5XX)

DAVENTRY PROGRAMME (April 24-30). (1600 metres)

SUNDAY.

- 10.30 a.m.—Time Signal, Greenwich; Weather Forecast.
- 3.30 p.m.—A Military Band Concert. Vivienne Chatterton (Soprano), John Thorne (Baritone), Cyril Towbin (Violin), The Wireless Military Band. Conducted by Lieut. B. Walton O'Donnell.
- 5.30—5.45 p.m.—Tales from the Old Testament. The Story of Gideon—Judges, Ch. vi. 11-40; vii. 1-25.
- 7.45 p.m.—Religious Service. Relayed from Truro Cathedral.
- 8.55 p.m.—The Week's Good Cause: St. George's Hospital.
- 9.0 p.m.—Weather Forecast. General News Bulletin; Local Announcements.
- 9.15 p.m.—Shipping Forecast.
- 9.20 p.m.—The Wireless Orchestra. Conducted by John Ansell. Imperial March (Sullivan). Overture to "Maritana" (Wallace). Romance, Valse Caprice (Rubinstein); Two Intermezzi from "The Jewels of the Madonna" (Wolf-Ferrari), Divertissement (Lalo).
- 10.0 p.m.—The Glasgow Orpheus Choir. Conducted by Hugh S. Robertson (S.B. from Glasgow). Old Scots Psalm, "Kedron" (arr. Hugh S. Robertson); Madrigal, "Great God of Love" (R. L. de Pearsall); Motet, "There is an Old Belief" (Parry); Part Song (Male Voices), "The Old Woman" (Hugh S. Robertson); Hebrew Hymn, "On Jordan's Banks" (arr. Max Bruch).
- 10.15 p.m.—The Wireless Orchestra. Slavonic Dances (Dvorak), Overture, "Gretna Green" (Gulraud).

MONDAY.

- 10.30 a.m.—Time Signal, Greenwich; Weather Forecast.
- 11.0 a.m.—Time Signal, Big Ben. The Daventry Quartet and Margaret Sutcliffe (Soprano); Tjakkio Kulper (Tenor); Rosina Wall (Violin); Alec Templeton (Pianoforte).
- 1.0 p.m.—Time Signal, Big Ben.
- 1.0-2.0 p.m.—Organ Recital. By Edgar T. Cook, Millicent Russell (Contraalto). Relayed from Southwark Cathedral.
- 3.0 p.m.—Concert in the Studio. The Daventry Quartet and Dunstan Hart (Baritone).
- 4.0 p.m.—The Royal Automobile Club Dance Band, from the Royal Automobile Club.
- 5.0 p.m.—Miss Mary Fielden. "A Pilgrim in Gallipoli."
- 5.15 p.m.—The Children's Hour.
- 6.0 p.m.—The Daventry Quartet.
- 9.30 p.m.—Time Signal, Greenwich; Weather Forecast, First General News Bulletin.
- 6.45 p.m.—M. E. M. Stephen, French Talk.
- 7.0 p.m.—Mr. Desmond MacCarthy, Literary Criticism.
- 7.15 p.m.—The Sonatas of Beethoven.
- 7.25 p.m.—Variety. Ronald Frankau, Entertainer. Norman Long, A Song, a Story, and a Piano. Just Four Fellers, Harmonised Syncopation. Elsie and Doris Waters, Original Duets. Harry Hemsley Child Impersonator.
- 8.30 p.m.—Symphony Concert. Stanislas Niedzielski (Pianoforte), The Wireless Symphony Orchestra, Leader, S. Kneale Kelly. Conducted by Percy Pitt. Overture, "Fierabras" (Schubert). Suite, "The Tomb of Couperin" (Ravel). Prelude: Forlane; Minuet; Rigaudon. Tone Poem, "The Swan of Tuonela" (Sibelius).
- 9.0 p.m.—Weather Forecast, Second General News Bulletin; Local Announcements.
- 9.15 p.m.—Shipping Forecast.
- 9.20 p.m.—Dorsetshire Dialect Talk, arranged by Mr. E. Le Breton Martin.
- 9.35-11.0 p.m.—Symphony Concert (continued). The Orchestra—Concerto in A minor for Pianoforte and Orchestra (Rozycki). Soloist, Stanislas Niedzielski. Symphony No. 4 in E flat (Glazunov).

Stanislas Niedzielski—Mazurka in B minor, No. 25, Study in C minor, Op. 10, Nocturne in F sharp major (Chopin). The Orchestra—Vaises Romantiques (Chabrier, arr. Felix Mottl).

11.0 p.m.—12.0 (midnight)—Dance Music. Kettner's Five, directed by Geoffrey Gelder, from Kettner's Restaurant.

TUESDAY.

- 10.30 a.m.—Time Signal (Greenwich) and Weather Forecast.
- 11.0 a.m.—Time Signal (Big Ben). Daventry Quartet and Mabel Corran (Contraalto), H. J. Attrill (Tenor), Agnes Mill (Pianoforte), Doris Hartley (The Banjoule Gig).
- 1.0-2.0 p.m.—Andrew Brown's Quintet and Pauline Maunders (Soprano).
- 3.0 p.m.—The Daventry Quartet and Marie Wilson (Violin).
- 4.0 p.m.—William Hodgson's Marble Arch Pavilion Orchestra from the Marble Arch Pavilion.
- 5.0 p.m.—Holidays at Home and Abroad. I. Mr. Tenlon Porter, Round Yorkshire Corners.
- 5.15 p.m.—The Children's Hour.
- 6.0 p.m.—The London Radio Dance Band, directed by Sidney Firman.
- 6.30 p.m.—Time Signal (Greenwich), Weather Forecast and First General News Bulletin.
- 6.45 p.m.—M. Marcel Boulestin: "Wastage in the Kitchen."
- 7.0 p.m.—The Sonatas of Beethoven.
- 7.10 p.m.—The Victor Olof Sextet: Overture to "The Magic Flute" (Mozart); Sulte, "La Boutique Fantasque" ("The Eccentric Toyshop") (Rossini, arr. Respighi). Suzanne Bertin (Soprano): Variations (in Italian) (Proch), Romance (Debussy), If I Love You (C. P. Simon). Sextet: Three Spanish Pictures (Ayckbourn)—Spanish Serenade, Spanish Love Song, Bolero. Suzanne Bertin: Chanson Triste—Sad Song (Duparc), Clair de Lune—Moonlight (Fauré), Lullaby (Cyril Scott). Sextet: Minuet (Pugnani, arr. Kreisler), Pioco (d'Amrosio), La Fringante (Piooco, arr. O'Neill), David of the White Rock—Old Welsh Folk Song (arr. Perry), Russian Dance (Cyril Scott, arr. Howard).
- 8.15 p.m.—Variety. Mason and Armes (Entertainers at the Piano), The Mirimba Trio (Novelty Instrumentalists), Janet Joye (Impressions of some famous Variety Artists), Edgar Lane presents a Mixed Grill, Ernest Jones (the Banjo Virtuoso), Harold Turley's Orchestra. Relayed from Prince's Café.

9.0 p.m.—Weather Forecast and News.

9.15 p.m.—Shipping Forecast.

9.20 p.m.—Sir H. Walford Davies: "Music and the Ordinary Listener."

10.0 p.m.—Time Signal.

9.40 p.m.—A Military Band Concert. The Band of H.M. Grenadier Guards. (By permission of Col. B. N. Sergison Brooke, C.M.G., D.S.O.). Director of Music, Lieut. G. Miller, L.R.A.M. Ethel Fenton (Contraalto), Barrington Hooper (Tenor). The Band: The Schiller-March (Meyerbeer), Reminiscences of Grieg (arr. Charles Godfrey). Ethel Fenton: Le Nil ("The Nile") (Leroux), Chant Venitien ("Venetian Song") (Bemberg), La Cloche ("The Bell") (Saint-Saens). The Band: Selection from "Das Rheingold" (Wagner), Duet from "Nadeshda" (Goring Thomas). Cornet: Corporal W. West. Trombone: Sergeant T. Southard. Barrington Hooper: Take, O take those Lips away (T. C. Sterndale Bennett), Phyllis Has Such Charming Graces (arr. Lane Wilson), Linden Lea (Vaughan Williams), Love Went A-Riding (Frank Bridge). The Band: Celtic Suite (Foulds)—The Clans, A Lament, The Call; Summer (Chaminade). Cornet Solo: Corporal W. West. Ethel Fenton: Over the Moor (Liddle), Hebrew Song (Korganoff), Now Sleeps the Crimson Petal (Quilter), Sea Fever (Ireland). The Band: Selection from "A Princess of Kensington" (German). Barrington Hooper: The Brightest

Day. How Wonderful, The Crown of the Year (Easthope Martin). The Band: Gavotte (Finck), Rigaudon from "Dardanus" (Rameau), Rhapsodic Dance—"The Bamboula" (Coleridge-Taylor).

11.30 p.m. to 12.0 (midnight)—Jack Payne's Hotel Cecil Dance Band from the Hotel Cecil.

WEDNESDAY.

- 10.30 a.m.—Time Signal, Greenwich; Weather Forecast.
- 11.0 p.m.—Time Signal, Big Ben. Daventry Quartet with Viola. Elisabeth Meller (Soprano); J. Challenor Heaton (Bass-Baritone).
- 11.45 a.m. (approx.)—Dorothy Denning ('Cello) and C. Whitaker Wilson (Pianoforte).
- 12.5 p.m. (approx.)—Concert (continued).
- 1.0-2.0 p.m.—Camille Couturier's Orchestra, from Restaurant Frascati.
- 3.0 p.m.—Eugene Cruft and his Octet and Joan Muirella (Contraalto), John Chandler (Tenor).
- 5.0 p.m.—Talk.
- 5.15 p.m.—The Children's Hour.
- 6.0 p.m.—Organ Recital by Reginald Foort, relayed from the New Gallery Cinema.
- 6.20 p.m.—The Week's Work in the Garden, by the Royal Horticultural Society.
- 6.30 p.m.—Time Signal, Greenwich; Weather Forecast, First General News Bulletin.
- 6.45 p.m.—Organ Recital by Reginald Foort (continued).
- 7.0 p.m.—Air Ministry Talk. Mr. P. J. V. Holmes: "Joy Riding."
- 7.15 p.m.—The Sonatas of Beethoven.
- 7.25 p.m.—Variety. Tom Clare at the Piano. The Houston Sisters, The Irrepressibles. Lee Morse and her Guitar. Sketch: "Sydney the Spectre," by J. D. Dickson.
- 8.15 p.m.—Chamber Music Recital. The Philharmonic Trio, Albert Fransella (flute), Leon Goossens (Oboe), F. Ticcatti (Pianoforte). Sonata (Johann Joachim Quantz). Andante: Allegro; Affettuoso; Vivace. F. Ticcatti—Pastorale and Capriccio (Scarlatti). Albert Fransella—Andante and Finale from D major Concerto (Mozart). The Trio—Sonata (Gluck). Andante; Allegro; Minuet. Leon Goossens—Shepherd's Lament (Henschel). The Trio—Tarantella (Phillippe Gaubert).
- 9.0 p.m.—Weather Forecast, Second General News Bulletin; Local Announcements.
- 9.15 p.m.—Shipping Forecast.
- 9.15 p.m.—Annual Dinner of the Musicians' Benevolent Fund. Programme of Music. Relayed from the Savoy Hotel. John Goss and the Cathedral Male Voice Quartet. Lampadalo lampo (Italian Sea Song) (arr. A. Favara), A Robin, gentil Robin (W. Cornishe (1512), The Hog's-eye Man (arr. Sir R. R. Terry), Sheep-shearing Song (Dorset) (arr. E. J. Moeran), Lillibulero (Anti-Jacobite Song, 1680) (arr. Reginald Paul). Iside Menges (Violin)—Malaguena (Sarasate), En Bateau (Boating) (Debussy), Tambourin Chinois (Chinese Tambourine) (Kreisler). John Goss and the Cathedral Male Voice Quartet—Après de ma blonde (French Army Song) (arr. Hubert J. Foss), Lowlands Sea Shanty (arr. S. Taylor Harris), The Chinese Bumboat Man—Sailors Forebitter (collected by Sir R. R. Terry), Corpus Christi Carol (Martu Shaw), The Last Long Mile (Song of the B.E.F.) (arr. Hubert J. Foss).
- 10.0-11.0 p.m.—The Bubbles Concert Party.
- 11.0 p.m.—12.0 (midnight)—Dance Music. The Riviera Club Dance Band from the Riviera Club.

THURSDAY.

- 10.30 a.m.—Time Signal, Greenwich; Weather Forecast.
- 11.0 a.m.—Time Signal, Big Ben. The Kensington Salon Orchestra; Phyllis Lucy Foster (Soprano); Henry Luscombe (Baritone); Leonora Szezmányi (Violin).
- 11.45 a.m. (approx.)—Readings by Miss Condell O'Neill.

12.5 p.m. (approx.)—Concert (cont.). S.B. from London:— (1.0 a.m.—Time Signal, Big Ben). 1.0-2.0 p.m.—The Week's Concert of New Gramophone Records.

3.0 p.m.—Evensong. Relayed from Westminster Abbey.

4.0 p.m.—The Walpole Cinema, Ealing, Orchestra, directed by Francis R. Drake. Relayed from Walpole Cinema, Ealing.

5.15 p.m.—The Children's Hour.

6.0 p.m.—Ministry of Agriculture Fortnightly Bulletin.

6.15 p.m.—Market Prices for Farmers.

6.20 p.m.—The London Radio Dance Band, directed by Sidney Firman.

6.30 p.m.—Time Signal, Greenwich; Weather Forecast, First General News Bulletin.

6.45 p.m.—The London Radio Dance Band (continued).

7.0 p.m.—The Sonatas of Beethoven. S.B. from Manchester:—

7.10 p.m.—An Hour of Vaudeville. Betty Wheatley and Harry Hopewell, in Snatches from Musical Comedy. L. T. Whipp, the popular Lancashire Dialect Entertainer. Lillian Cooper presents some recent successes. The Vaudeville Players in "A Quiet Rubber," by Harold Simpson. (The Cast includes Hylda Metcalf, Betty Elsmore, Charles Nesbitt and E. H. Bridgstock). Klinton Shepherd featuring his successful Song Scene, "The Ginchy Road," by Edward Lauri. Scott and Robbie, two Friendly Fellows. Supported by The Manchester Station Vaudeville Four: Don Hyden (Violin), Sidney Wright ('Cello), Pat Ryan (Clarinet), Eric Fogg (Pianoforte).

8.15 p.m.—Light Orchestral Concert. The Wireless Orchestra and The Wireless Chorus (Chorus Master, Stanford Robinson), Conducted by John Ansell. Overture, "The Naiads" (Sterndale Bennett).

8.30 p.m.—The Chorus: Oh, yes, has any found a lad? (Thomas Tomkins); Awake, Sweet Love (Dowland); A Pretty Bonny Lass; Lullaby (Byrd); Come, Phyllis, come into these Bowers (Thomas Ford).

8.40 p.m.—The Guildford Suite (T. F. Dunhill). (Conducted by Claude Powell).

9.0 p.m.—Weather Forecast, Second General News Bulletin, Local Announcements.

9.15 p.m.—Shipping Forecast.

9.20 p.m.—Travel Talk. Mr. Humbert Wolfe: Lake Geneva.

9.35 p.m.—Light Orchestral Concert (continued). Orchestra: Polonaise from "Etienne Masal" (Saint-Saens).

9.40 p.m.—Chorus: Cupid and Rosalind (Stanford); It's Oh! to be a Wild Wind (Elgar); London Town (Edward German).

9.47 p.m.—The Last Straw in the life of Reggie and Della. By L. du G. Reggie (John Charlton), Della (Phyllis Panting). Episode 1. In a Departmental Store. Episode 2. In a Flat in complete darkness.

10.15 p.m.—Chorus: Folk Songs: The Dumb Wife (arr. Edward Branscombe); Early One Morning (arr. Dunhill); The Pretty Ploughing-boy (arr. Gerrard Williams).

10.20 p.m.—Orchestra: Le Roi l'a dit (Debises).

10.30-12.0 p.m.—Dance Music: The Savoy Orpheans and the Savoy Havana Band from the Savoy Hotel.

FRIDAY.

- 10.30 a.m.—Time Signal (Greenwich), Weather Forecast.
- 11.0 a.m.—Time Signal, Big Ben. Daventry Quartet and Violet M. Turner (Contraalto), W. R. Allen (Baritone), Elsie G. Hogger (Pianoforte).
- 12.30 p.m.—Organ Recital, by Leonard H. Warner. Relayed from St. Boltolph's Church.
- 1.0-2.0 p.m.—Lunch Time Music from the Hotel Metropole.
- 3.0 p.m.—Corelli Windeatt's Band and The Mexborough Excelsior Male Voice Quartet. Lama Moore (Soprano), Gena Milne (Violoncello).

5.0 p.m.—Miss Naomi Royde-Smith, Report on Competition No. IV, and Announcement of Competition No. V.

5.15 p.m.—The Children's Hour.

6.0 p.m.—Frank Westfield's Orchestra from the Prince of Wales Playhouse, Lewisham.

6.30 p.m.—Time Signal (Greenwich), Weather Forecast, First General News Bulletin.

6.45 p.m.—Frank Westfield's Orchestra (Continued).

7.0 p.m.—Mr. Percy Scholes, the B.B.C. Music Critic.

7.15 p.m.—The Sonatas of Beethoven. S.B. from Glasgow:—

7.25 p.m.—Variety. George Hutchison, entertainer. Tom and Bert Gunn, duets at the Piano. Jeffries and his Dance Orchestra from the Locarno Dance Salon, Glasgow.

8.0 p.m.—"Romeo and Juliet," an Opera by Charles Gounod. Juliet (Miriam Licette), Stephano (Alice Moxon), Gertrude (Glady's Parr), Friar Lawrence (Norman Allin), Capulet (Harry Brindle), Tybalt (Leonard Gowings), Mercutio (Harold Williams), Gregorio, Dnke (Herbert Simmonds), Benvolo (Stanley Riley), Romeo (Parry Jones). The Wireless Symphony Orchestra, conducted by Percy Pitt. Leader, S. Kneale Kelley. The Wireless Chorus. Chorus Master, Stanford Robinson.

9.0 p.m.—Weather Forecast, Second General News Bulletin, Local Announcements.

9.15 p.m.—Shipping Forecast.

9.20 p.m.—"Romeo and Juliet" (Continued).

10.20 p.m.—Topical Talk or Special Feature.

10.35-11.5 p.m.—Variety. Ed. Lowry (Keep Smiling), Clapham and Dwyer (Entertainers).

11.5-12.0 p.m.—Dance Music. Debroy Somers' Ciro's Club Band from Ciro's Club.

SATURDAY.

- 10.30 a.m.—Time Signal, Greenwich; Weather Forecast.
- 1.45 p.m.—Launch of the Commonwealth and Dominion Liner, "Port Gisborne."
- 3.0 p.m.—Light Orchestral Concert. Eva Sparkes (Contraalto), James Topping (Tenor), Edith Penville (Flute). The Wireless Orchestra, conducted by John Ansell.
- 5.15 p.m.—The Children's Hour.
- 6.0 p.m.—Light Music.
- 6.30 p.m.—Time Signal, Greenwich; Weather Forecast, First General News Bulletin.
- 6.45 p.m.—Sports Talk.
- 7.0 p.m.—Topical Talk.
- 7.15 p.m.—The Sonatas of Beethoven. S.B. from Belfast:—
- 7.25 p.m.—Writers of To-day—Mr. Liam O'Flaherty, reading a Short Story.
- 7.45 p.m.—"Scraps." A New Radio Revue. Musical Numbers by Various Composers. Cast includes: Harold Clemence, Alma Vane, Harold Kimberley, Florence Bayfield, Philip Wade, Mabel Constanduros and The Radio Chorus. The London Radio Dance Band, directed by Sidney Firman.
- 8.45 p.m. (approx.)—Speeches following the Annual Dinner of the Royal Academy. The President, Sir Frank Dicksee, will propose the health of His Majesty the King, and other Members of the Royal Family. H.R.H. Prince Henry will respond. Relayed from Gallery III, The Royal Academy.
- 9.0 p.m. (approx.)—Weather Forecast, Second General News Bulletin; Local Announcements.
- 9.15 p.m. (approx.)—Shipping Forecast.
- 9.20 p.m. (approx.)—The Railway Clearing House Choir.
- 9.35 p.m. (approx.)—Fay Marbe, the American Revue Star. The Don Cossack Quartet, National Songs.
- 10.30 p.m.—12.0 (midnight)—Dance Music from the Savoy Hotel.

PROGRAMMES FOR SUNDAY

(April 24)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2 RN). W.L.: 319.1 m.; 1.5 kw.
 8.30 p.m.—Concert by the Radio Brass and Reed Band. Soloist, W. J. Watt (Tenor).
 10.30 p.m. (approx.)—Close Down.

AUSTRIA

VIENNA. Radio-Wien. W.L.: 577 and 517.2 m.; 1.5 and 5 kw.
 10.30 a.m.—Organ Recital.
 11.0 a.m.—Symphony Concert.
 3.30 p.m.—Concert. 1. Orpheus in the Underworld—Overture (Offenbach—Binder). 2. La Favorite—Selection (Donizetti). 3. Hungarian Rhapsody (Liszt). 4. Drei Lotosblumen—Ballet Suite (Recktenwald). 6. Der Rastelbinder—Selection (Léhar). 7. Songs. 8. Humorous Selections. 9. I bin vom Schottentfeld—March (Wetaschek).
 5.35 p.m.—Dance Music.
 6.35 p.m.—Talk on "The Maoris."
 7.25 p.m.—Concert of Chamber Music. 1. Pianoforte Trio (Smetana).
 8.0 p.m.—"Si j'étais Roi"—Opera (Adam).

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5 m.; 1.5 kw.
 Transmits at intervals from 5.0 p.m.
 7.30 p.m.—"Radio Chronique."
 8.0 p.m.—Concert. 1. "Merry Wives of Windsor" Overture (Nicolai). 2. Selection from "Gwendoline" (Chabrier). 3. Air from "Manon" (Massenet). 4. Selection (Dubois). 5. Bacchanale from "Samson" (Saint-Saëns). 6. Etude (Saint-Saëns). 7. Danse Macabre (Saint-Saëns).
 9.0 p.m.—Talk.
 9.15 p.m. (approx.)—Concert (continued). 8. Suite for Orchestra (Schmitt). 9. Rhapsodie for Clarinet and Piano (Debussy). 10. Désir (Saeys). 11. (a) Sonnet (Huberty). (b) Le mariage des Roses (Franck). 12. Danses persanes (Moussorgsky). 13. Romance in F (Beethoven). 14. Serenade (Bordier). 15. Conte d'Avril (Widor).
 10.0 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw.
 Programme relayed by Sorø (1,153 m.).
 10.0 a.m.—Divine Service from the Cathedral.
 3.0 p.m.—Tea Concert.
 5.0 p.m.—Divine Service.
 6.30 p.m.—Children's Corner.
 7.0 p.m.—News and Time.
 7.30 p.m.—Talk and Reading.
 8.0 p.m.—Time from the Town Hall.
 8.2 p.m.—Concert of German Music. 1. "Iphigenia"—Overture (Gluck). 2. "Don Juan"—Selection (Mozart). 3. Songs: (a) Air from "The Magic Flute," (b) Air from "Il seraglio" (Mozart). 4. "Oberon"—Overture (Weber). 5. "Tannhäuser"—Pilgrims' Chorus (Wagner). 6. Song from "The Merry Wives of Windsor." 7. "King Manfred"—Ballet Music (Reinecke). 8. "Der Rosenkavalier"—Waltz (R. Strauss).
 9.0 p.m.—News.
 9.30 p.m.—Concert from the Works of Lumbye. 1. Songs: (a) Den siste Nat, (b) Du, Søvns Gud, (c) Venner, vi med Glaede Menneft træde, (d) Ameli's Song, (e) Hvor klinger deilig disse Dansemelodier, (f) Luftige Vaesen, Saa straaler i Balsalens Kjerter. 2. Orchestral Selections: (a) War Dance from "Far from Denmark," (b) Pepita Polka, (c) A Young Mother's Dream, (d) Helga Marzurka, (e) Hesperus Waltz, (f) Gallop.
 10.45 p.m.—Dance Music from the Nimb Restaurant.
 12.0 midnight.—Chimes from the Town Hall.
 12.5 a.m. (approx.)—Close Down.

FRANCE

PARIS. Ecole Supérieure (EFTT). W.L.: 464 m.; 0.5 kw.
 Transmits at intervals from 8 a.m.
 8.30 p.m.—Literary Talk, followed by Speeches, Concert and News.
 12.0 (midnight) (approx.)—Close Down.

PARIS. Eiffel Tower (FL). W.L.: 9.9 a.m.—Legal Notes.
 9.15 a.m.—Morning Recital.
 10.55 a.m.—Divine Service. Relayed from the University Church Kil (254.2 m.).
 11.0 a.m.—Esperanto Lesson.
 11.30 a.m.—Open-air Concert. Relayed from Hanover (297 m.).
 12.30 p.m.—Wireless Notes.
 12.55 p.m.—Time from Nauen.
 1.5 p.m.—Concert.
 1.50 p.m.—Chamber Music from Hanover.
 2.30 p.m.—Talk, "Chess."
 3.0 p.m.—Hermann Löns Recital
 3.30 p.m.—Children's Corner.
 4.5 p.m.—Concert.
 5.5 p.m.—Talk, "The Swiss Travels of a Humorist."
 5.30 p.m.—Concert from the Café Walhof: 1. Fest—Overture (Lassen). 2. Pussta Legend (Lindsay-Theimer). 3. "S kommt ein Voger geflogen, with Variations (Ochs). 4. Von Gluck bis Wagner—Potpourri (Schreiner). 5. Delirium (Joh. Strauss). 6. Salvic Imperator (Fucik).
 7.30 p.m.—Talk, "Hebbel and Weimar."
 7.50 p.m.—Sports and News.
 8.0 p.m.—"Boccaccio"—Operetta (Suppé).
 10.30 p.m. (approx.)—Concert from the Café Continental.
 11.50 p.m.—Ice Report.
 12.0 (midnight) (approx.)—Close Down.

PARIS. Petit Parisien. W.L.: 340.9 m.; 0.5 kw.
 9.0 p.m.—Concert. 1. Timbre d'Argent—Overture (Saint-Saëns). 2. Scherzo de Roma (Bizet). 3. Cavalleria Rusticana—Intermezzo (Mascagni). 4. Symphony Pathétique—First Movement (Tchakovsky). 5. "Le Cid"—Ballet Music (Massenet). 6. Slavonic Dance (Dvorák). 7. Marche Zigane (Reger).

PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.
 12 (noon)—Choral Selections of Sacred Music followed by Address.
 12.45 p.m.—Concert. 1. The Blue Danube—Waltz (Strauss). 2. Children's Corner—Suite (Debussy). 3. (a) Berceuse (Gretchaninov); (b) Oberstass (Wieniawski). 4. Jardin d'amour (Wood). 5. Danse Macabre (Saint-Saëns). 6. Seguidilla (Albeniz). 7. Exquisite-moment (Worsley). 8. Moment Musical (Schubert). 9. Isoleine (Messager).
 4.45 p.m.—Concert. 1. On va s'en payer une tranche (De Buxeuil). 2. Au bal musette (Gavel). 3. Nirshana (Wakham). 4. Nino Dios—Tango (Lomuto). 5. Naughty Melody (Parsons). 6. Vlejo Verde—Tango (Smet). 7. Kblmarar (Sieuille). 8. La Tarde (Seras). 9. Mimosa (Margis). 10. Ys, Degoné (De Bozi).
 7.40 p.m.—Topical Talk.
 8.15 p.m.—News.
 8.30 p.m.—Children's Corner.
 9.0 p.m.—Dance Music by Mario Cazes and his Orchestra. In the Intervals, News.

GERMANY

BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw.
 Programme relayed by Koenigs-wusterhausen.
 9.0 a.m.—Morning Recital.
 11.30 a.m.—Orchestral Concert.
 4.30 p.m.—Concert.
 6.40—8.30 p.m.—Talks. Voxhaus only.
 8.30 p.m.—Concert of String Music. 1. Fanfarenmarsch (Göttert). 2. "Poet and Peasant"—Overture (Suppé). 3. Münchener Kindl (Komzak). 4. Romaneska (Zikoff). 5. Reitraite (Keler-Bela). 6. Kavallerie—Parademarsch No. 55 (Princess Charlotte). 7. Am Lagerfeuer (Siede). 8. Der verklungene Ton (Sullivan). 9. Nur ein Versuch (Teike). 10. Two Marches.
 10.15 p.m. (approx.)—Weather and News.
 10.30 p.m.—Dance Music.
 12.30 a.m. (approx. Monday, April 25th.)—Close Down.

BRESLAU. Schlesische Funkstunde. W.L.: 315.8 m.; 4 kw.
 8.30 a.m.—Morning Concert. Relayed from Gleiwitz (250 m.).
 10.0 a.m.—Catholic Recital.
 12.0 noon.—Chamber Music.
 1.10 p.m.—Talk.
 2.45 p.m.—Wireless Competition.
 3.0 p.m.—Gardening Talk.
 3.15 p.m.—Fairy Tales.
 3.45 p.m.—Orchestral Concert.
 4.50 p.m.—Programme from the Sports Stadium.
 5.35 p.m.—Humorous Literary Selections.
 6.10 p.m.—Song Recital.
 7.10 p.m.—Natural Science Talk.
 7.40 p.m.—Talk, "Inventions and Discoveries."
 8.25 p.m.—Concert of Popular Music.
 10.15 p.m.—Dance Music.
 12.0 midnight (approx.)—Close Down.

HAMBURG. Norag (ha, in Morse). W.L.: 394.7 m.; 4 kw.
 8.25 a.m.—Time and Weather.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 468.8 m.; 25 kw.
 Programme also relayed by Muenster on 241.9 m.
 9.0 a.m.—Morning Recital from Elberfeld.
 11.0 a.m.—Talk on "Goethe" from Cologne.
 11.20 a.m.—Talk on "Karl Leberecht Immermann" from Muenster.
 11.40 a.m.—Taxation Talk from Muenster.
 12.10 p.m.—Talk, "Flowers in Poetry" from Cologne.
 12.35 p.m.—Talk on "Science and Art" from Cologne.
 1.0 p.m.—Concert of Chamber Music from Cologne.
 2.30 p.m.—Literary Talk from Muenster.
 3.0 p.m.—Chess Lesson from Düsseldorf.
 5.0 p.m.—Concert from Cologne.
 7.0 p.m.—"Goethe's Love Affairs" from Cologne.
 7.45 p.m.—Concert of Light Music.
 8.15 p.m.—"Fidelio"—Opera (Beethoven), from Cologne.
 10.45 p.m. (approx.)—Concert from the Café Corso, Dortmund.
 12.0 (midnight) (approx.)—Close Down.

KOENIGSBERG. Ostmarken Rundfunk. W.L.: 329.7 m.; 4 kw.
 9.0 a.m.—Recital of Sacred Songs.
 11.0 a.m.—Morning Concert: 1. Reading. 2. "Egmont"—Overture (Beethoven). 3. Four Poems by Goethe with music by Schubert: (a) Das Fischermaedchen; (b) Nur wer die Sehnsucht kennt; (c) Suleika; (d) Gretchen am Spinnrad. 4. Andante cantabile from "The Jupiter Symphony (Mozart). 5. Minuet from the C major Symphony (Beethoven). 6. Larghetto (Mozart). 7. "The Marriage of Figaro"—Overture (Mozart).
 1.15 p.m.—Time from Nauen.
 1.25 p.m.—Time and Weather.
 4.0 p.m.—Concert. Relayed from Danzig (272.7 m.).
 6.30 p.m.—Chess Lesson.
 7.30 p.m.—"Pique Dame"—Opera (Tchakovsky), relayed from the Municipal Theatre, followed by Dance Music. News in the Interval.
 11.30 p.m. (approx.)—Close Down.

STUTTGART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw.
 11.30 a.m.—Morning Recital. 1. Organ Prelude. 2. Mixed Choir with Orchestra: "Jusanae et Vanae Durae" (Haydn). 3. Neues Werden. 4. Andante from the G major Quartet (Mozart). 5. Recitative: "Frühlings Seg." 6. Largo (Handel). 7. Mixed Choir with Orchestra: Selection from the "Herakles" Oratorio (Handel). 8. Finale.
 1.10 p.m.—Gramophone Selections.
 3.0 p.m.—Talk, "Friendship."
 3.30 p.m.—Children's Corner from Hamburg (394.7 m.).
 4.0 p.m.—Concert of Orchestral Music and short play, "Max and Moritz."

6.0 p.m.—Time and Sports Notes.
 6.15 p.m.—Talk, "Art, Handicraft and Industry."
 6.45 p.m.—Readings by Christoph Wiprecht from his own poetical works.
 7.45 p.m.—Time and Sports Notes.
 8.0 p.m.—Variety Concert. 1. "Alessandro Stradella"—Overture (Flotow). 2. Schlittschuhläufer—Waltz (Waldteufel). 3. "Die Nacht des Verhängnisses"—Farce (Max Heye) with musical interludes. 4. The March of the Tin Soldiers (Jessel).
 11.0 p.m.—Press and Sports News.
 11.15 p.m. (approx.)—Close Down.

HOLLAND
HILVERSUM. Hilversumsche Draadlooz Omroep (HDO). W.L.: 1,060 m.; 5 kw.
 10.40 a.m.—Divine Service.
 1.40 p.m.—Concert by the Mandoline Orchestra. 1. March of the Priests from "Athalia" (Mendelssohn). 2. Minuet (Schick). 3. Fantasie Rhapsodique (Kok). 4. Talk. 5. Andante Cantabile from the First Symphony (Beethoven Ranieri). 6. The Blue Danube Waltz (Strauss). 7. Gli Orzani ed i Curiazzini—Symphony (Poli). 8. Giovanni Esploratori d'Italia—March (Lissoni).
 3.10 p.m.—Orchestral Concert from the Amsterdam Zoological Gardens.
 5.40 p.m.—Divine Service.
 8.40 p.m.—Weather and News.
 8.50 p.m.—Concert of Opera Music.
 11.40 p.m. (approx.)—Close Down.

HUNGARY
BUDAPEST. Magyar Radio Ujsag. W.L.: 555.6 m.; 3 kw.
 9.30 a.m.—Talk on "Beauty Culture."
 10.0 a.m.—Divine Service.
 11.45 a.m.—Symphony Concert. 1. March (Goldmark). 2. Siegfried—Idyll (Wagner). 3. Humoresque (Dvorák). 4. Songs (Liszt). 5. The Marriage of Figaro—Overture (Mozart).
 1.15 p.m.—Weather.
 1.20 p.m.—Agricultural Report.
 4.15 p.m.—Children's Corner.
 5.0 p.m.—Weather.
 5.2 p.m.—"Gyurkovics Ianyok"—Play (Ferenc).
 8.0 p.m.—Concert of Light Music. 1. The Merry Wives of Windsor—Duet (Nicolai). 2. Duet (Mozart). 3. Frühlingstimmen—Waltz (Strauss). 4. Dorfschwalben (Strauss). 5. Blue Danube Waltz (Strauss).
 8.50 p.m.—Racing Report.
 10.0 p.m.—Dance Music from the Ritz Hotel.

ITALY
MILAN. Unione Radiofonica Italiana (IMI). W.L.: 322.6 m.; 1.5 kw.
 10.30 a.m.—Opening Signal.
 10.31 a.m.—Vocal and Instrumental Concert of Sacred Music.
 1.0 p.m.—News.
 4.15 p.m.—Vocal and Instrumental Concert. 1. Variations (Proch). 2. Rigoletto—Selection (Verdi). 3. William Tell—Selection (Rossini). 4. Tarantella (Rossini). 5. La Princesse (Grieg). 6. Bolero (Kuffner). 7. Gavotte (Bonet). 8. Tango Cubano (Garcla). 9. Pianoforte Selection (Vinas).
 5.15 p.m.—Children's Corner.
 5.45 p.m.—Forestry Notes and News.
 8.30 p.m.—Opening Signal.
 8.31 p.m.—Concert of Roman Music.
 10.0 p.m.—Concert. 1. Tancred (Rossini). 2. Adrienne Lecouvreur (Cilea). 3. Iris (Mascagni). Followed by News.
 10.45 p.m.—Dance Music.
ROME. Unione Radiofonica Italiana (IRO). W.L.: 450 m.; 3 kw.
 10.30 a.m.—Concert of Sacred Vocal and Instrumental Music.
 1.0 p.m.—News.
 5.0 p.m.—Dance Music from the Plaza Hotel.
 8.30 p.m.—Forestry Talk.
 8.45 p.m.—News.
 9.0 p.m.—"Ernani"—Opera (Verdi).
 10.0 p.m.—Time.
 10.55 p.m.—News.

NORWAY
OSLO. Kringkastingskapet. W.L.: 481.5 m.; 1.5 kw.
 10.25 a.m.—Chimes.
 11.0 a.m.—Divine Service. Relayed from the Military Church, Oslo.

7.15 p.m.—News.
 7.30 p.m.—Talk on "The Battle of Lyngor."
 8.0 p.m.—Time.
 8.2 p.m.—Concert.
 9.0 p.m.—Talk on "Bird-hunting."
 9.30 p.m.—Hardanger—Violin Selections.
 10.0 p.m.—News and Weather.
 10.15 p.m. (approx.)—Close Down.

SPAIN
BARCELONA. Radio Barcelona (EAJ1). W.L.: 344.8 m.; 1.5 kw.
 12.0 (noon)—Chimes and Weather.
 11.15 a.m.—Concert.
 6.10 p.m.—Station Quintet.
 6.30 p.m.—Talk in Catalan.
 7.0 p.m.—Recitations.
 7.30 p.m.—Song Recital.
 8.0 p.m.—Station Quintet.
 8.40 p.m.—Sports Notes.
 9.0 p.m. (approx.)—Close Down.

CADIZ. Union Radio (EAJ3). W.L.: 362 m. (297 m.); 0.55 kw.
 7.5 p.m.—Concert. 1. "El Metodo Gorritz" (Lelo). 2. "Songs of the Rhine—Love" (Bizet). 3. Selection from "Lakmé" (Delibes). 4. "The Peasant's Creed"—Song (Ruiz). 5. "La Rabalera"—Jota (Vives). 6. Santa Lucia—Neapolitan Song (Ruiz). 7. "Lolita"—Serenade (Buzia-Peccia). 8. Andalusian Rhapsody (Oeon). 9. "The Two Grenadiers" (Schumann). 10. Selection from "André Chenier" (Giordano). 11. "La Procession del Rocío" (Turina). 12. Danse Fantastique (Turina). 13. "Poet and Peasant" (Suppé). 14. Dances. In the Interval at 8: Time, and Arrangements Jotas.
 9.0 p.m. (approx.)—Close Down.

MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.
 11.30 a.m.—Concert by the Municipal Band.
 2.0 p.m.—Concert by the "Arty's" Orchestra.
 6.30 p.m.—Concert.
 9.30 p.m.—Bullfighting Notes.
 10.0 p.m.—Time.
 10.2 p.m.—Selection from a Musical Play.
 12.30 a.m. (Monday, April 25th.—approx.)—Close Down.

SWITZERLAND
BERN. Radio-Bern. W.L.: 411 m.; 6 kw.
 11.0 a.m.—Morning Concert.
 1.0 p.m.—Time and Weather.
 1.5 p.m.—Concert relayed by Zurich (496 m.).
 8.30 p.m.—Orchestral Concert.
 7.30 p.m.—Time and Weather.
 7.35 p.m.—Concert of Orchestral Selections and Readings in Bern Dialect.
 9.0 p.m.—The Second Act of "Tannhäuser" (Wagner) relayed from the Bern Stadt Theatre.
 10.0 p.m.—News.
 10.30 p.m. (approx.)—Close Down.

U.S.A.
PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 309.1 m. and 64 m.; 25 kw.
 5.0 p.m.—Divine Service, relayed from the First Baptist Church, Pittsburgh.
 8.0 p.m.—Roxy's Programme relayed from New York.
 10.0 p.m.—Organ Recital relayed from the Carnegie Hall, Pittsburgh.
 10.45 p.m.—Evangelion relayed from the Shadyside Presbyterian Church.
 12.30 a.m. (Monday, April 25th.)—"Twilight Hour of Music," by the Station Orchestra.
 1.45 a.m.—Divine Service relayed from the Point Breeze Presbyterian Church.
 3.0 a.m.—Violin Recital, relayed from New York.
 3.30 a.m.—"The National Weekly Revue" relayed from New York.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.
 2.45 p.m.—Divine Service.
 7.0 p.m.—Musical Programme relayed from Syracuse, N.Y.
 8.0 p.m.—Organ Recital.
 11.30 p.m.—Divine Service.
 12.45 a.m. (Monday, April 25th.)—Violin and Pianoforte Recital.
 1.15 a.m.—Attwater Kent Hour, relayed from New York.

PROGRAMMES FOR MONDAY

(April 25)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2RN). W.L.: 319.1 m.; 1.5 kw.

1.30 p.m.—Stock Exchange Quotations, News and Weather, followed by Gramophone Records.

6.30 p.m.—Children's Corner.

7.0 p.m.—Gramophone Records.

7.25 p.m.—Stock Exchange List and News.

7.30 p.m.—Irish Lesson by Mairead Ní Ghrada.

7.45 p.m.—Gardening Talk by G. O. Sherrard.

8.0 p.m.—Inauguration of the Cork Station. Programme relayed from Cork.

11.0 p.m. (approx.)—Close Down.

AUSTRIA

GRAZ. Oest Radio Verkehrs. W.L.: 353 m.; 0.5 kw.

11.0 a.m.—Concert.

4.0 p.m.—Concert. 1. Bulgarian March (Stoekel). 2. Donna Vatra—Tango (Popping). 3. Delirium—Waltz (Strauss). 4. "The Daughter of the Regiment"—Overture (Donizetti). 5. Sérénade ambulante (Micheli). 6. Ukraine—Suite (Morena). 7. Selection from "Werther" (Massenet). 8. Schwartzwaldmadel—Potpourri (Jessel). 9. Selections (Kalman): (a) Die Kleine Mädchen, (b) Wenn du mich sitzen lässt, 10. Dance Music: (a) Sag mir's beim Tanz (Benatsky), (b) L'Ultimo arlecchino—Fox-trot (Bixio), (c) Geh—Blues (Benatsky), (d) Glocken der Liebes-Boston (Benatsky).

6.0 p.m.—Chess Lesson.

6.30 p.m.—Medical Talk—"The Digestion."

7.0 p.m.—Italian Lesson.

7.30 p.m.—Violin Recital. 1. Prelude and Allegro (Pugnani-Kreisler). 2. La Précieuse (Couperin). 3. Rondo (Mozart). 4. Old Vienna Dances (Kreisler): (a) Liebesfreund, (b) Liebeslied, (c) Schön Rosmarin. 5. Ländler (Pachernegg-Popoff). 6. Saltarella (Wieniawski-Popoff). 7. Waltz (Chopin-Popoff).

8.30 p.m.—Choral Concert. 1. O du klarblauer Himmel (Silcher). 2. Gestern auf d'Nacht (Pommer). 3. Ein fehlerfrei (Koch Langenbren). 4. Folk Song (Blumel). 5. Dance (Zoller). 6. Fröhliche Sanger (Neutert). 7. I was net mir is (Kirchl). 8. Die fufzig Ziegel (Kremsner). 9. Selection (Ockerbauer).

9.30 p.m.—Concert. 1. Noch sind die Tage der Rosen (Baumgartner). 2. Kommu, wir wandeln (Cornelius). 3. Das grab auf der Heide (Heiser). 4. Winterlied (Von Koss). 5. Im Herbst (Franz). 6. Der Asra (Rubinstein). Das Herz am Rheiu (Hill). 8. Selection from "Alexander Stradella" (Plotow). 9. Chapelou's Song (Adani).

11.0 p.m. (approx.)—News and Weather.

VIENNA. Radio-Wien. W.L.: 577 m. and 517.2 m.; 1.5 and 5 kw. Transmits at intervals from 11 a.m.

6.10 p.m.—Talk on "Javanese Music."

6.40 p.m.—Talk on "The Microscope."

7.10 p.m.—Theatre Notes.

8.5 p.m.—"Masters of French Opera Music"—Programme of Talks with musical illustrations.

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5; 1.5 kw.

Transmits at intervals from 5 p.m.

7.30 p.m.—"Radio-Chronique."

8.0 p.m.—Programme relayed from the Folies Bergères Theatre.

9.0 p.m.—Topical Talk.

9.15 p.m.—Concert.

10.0 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw.

Programme relayed by Soro (1,153 m.).

4.0 p.m.—Concert.

6.0 p.m.—Chimes from the Town Hall.

6.30 p.m.—Elementary English Lesson.

7.0 p.m.—News, Exchange and Time.

7.30 p.m.—Talk: "The Stage and Slander."

8.0 p.m.—Time from the Town Hall.

8.2 p.m.—"Samson"—Oratorio in three parts for Solists, choir and Orchestra (Handel), relayed from the Odd Fellows Palace.

FRANCE

PARIS. Ecole Supérieure (EPTT). W.L.: 404 m.; 0.5 kw.

Transmits at intervals from 8.0 a.m.

8.15 p.m.—Talk on "X Rays."

8.30 p.m.—Talk on "Diseases which are Carried by Animals."

8.45 p.m.—Science Talk.

9.0 p.m.—Concert, followed by News.

PARIS. Eiffel Tower (FL). W.L.: 2,650 m.; 5 kw.

10.26 a.m.—Time Signal.

6.45 p.m.—"Le Journal Parlé."

8.0 p.m.—Weather.

8.15 p.m.—Concert.

9.15 p.m.—Educational Programme.

11.26 p.m.—Time Signal.

PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.

10.30 a.m.—News, Exchange Quotations, and Musical Selections.

12.30 p.m.—Concert: 1. Billy Possum (Salabert). 2. Vision de Carnaval (Fétras). 3. Poem (Fibich and Jonata). 4. Sous les Bruyères (Labis). 5. Sapho—Air (Massenet). 6. Chanson d'Automne (Nougues). 7. Concerto for Two Violins (Nachez). 8. Crepuscule (Massenet). 9. Obstinatlon (Fontenailles). 10. Tarantelle (Popper). 11. Samson—Minuet (Handel). 12. Fifth Quartet (Mozart). 13. Chanson Triste (Tschalkovsky). 14. Mélodie (Rubinstein).

1.50 p.m.—News.

4.30 p.m.—Exchange Quotations.

4.45 p.m.—Concert.

5.35 p.m.—Market Prices.

7.30 p.m.—Colonial Notes and Topical Talk.

8.0 p.m.—Exchange Quotations and News.

8.30 p.m.—Talk on "Horticulture," by M. Georges Truffaut.

8.45 p.m.—Concert arranged by "Radio Art et Pensée"—Franco-Roumanian Programme. Talk by the Roumanian Ambassador for Paris, Roumanian Music, Recitatins and Violin and Pianoforte Selections. In the intervals, News.

TOULOUSE. Radiophonie du Midi. W.L.: 389.6 m.; 2 kw.

5.35 p.m.—Agricultural Report.

8.0 p.m.—Time, Exchange Quotations and News.

8.45 p.m.—Concert arranged by "La Compagnie des Lampes": 1. Paso Doble des Mascara (Lynde). 2. Incantation (Chausson). 3. Tous à la Paye (Parys). 4. On the Giralda (Turina). 5. Le Roi d'Ys—Selection (Lalo). 6. Torador and Andalusian Girl (Rubinstein). 7. Song without Words (Tschalkovsky). 8. Bye Bye Blackbird (Henderson).

GERMANY

BERLIN. Koenigswusterhausen. W.L.: 1,250 m.; 8 kw.

Transmits at intervals from 2.30 p.m.

5.0 p.m.—Chess Lesson.

6.0 p.m.—Talk: "Stock Breeding."

6.30 p.m.—Elementary English Lesson.

6.55 p.m.—Talk on "Office Organisation."

7.20 p.m.—Week-end Review.

8.0 p.m.—Programme relayed from Breslau (315.8 m.).

BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw.

Transmits at intervals from 10.10 a.m.

5.0 p.m.—Orchestral Concert.

6.0 p.m.—Household Hints, Theatre and Film Notes.

6.10 p.m.—Talk.

6.30 p.m.—Technical Wireless Talk.

7.5 p.m.—Talk: "Political Economy."

7.30 p.m.—Talk: "Forgotten Poets."

8.0 p.m.—Introductory Talk to following broadcast.

8.30 p.m.—"Anarchie in Sillan." Play (Arnolt Bronnen).

10.15 p.m. (approx.)—Weather and News.

10.30 p.m.—Dance Music.

12.30 p.m. (April 26th, approx.)—Close Down.

BRESLAU. Schlesische Funkstunde. W.L.: 315.8 m.; 4 kw.

12.0 (Noon)—Concert: 1. Concerto for two Violins and Pianoforte (Mozart). 2. Second Movement from the 'Cello Concerto in D Major (Haydn). 3. Pianoforte Quartet in E Flat Major (Mozart).

4.30 p.m.—Orchestral Concert: 1. "The Marriage of Figaro"—Overture (Mozart). 2. Invitation to the Dance (Weber). 3. "The Bartered Bride"—Selection (Smetana). 4. Second Movement to the Violin—Concerto (Dvorák). 5. Polish Dance (Scharwenka). 6. "A Midsummer Night's Dream"—Selection (Mendelssohn).

6.0 p.m.—Legal Talk.

6.50 p.m.—Wireless Notes.

7.25 p.m.—Talk: "All Over Germany."

8.5 p.m.—Talk: "The Younger Generation" and Reading by Bertold Brecht from his own Works.

9.0 p.m.—Cembalo Concert: 1. Sonata (Bach). 2. Passacaglia (Handel). 3. Old Dances: (a) Sarabande et Passepied (Handel); (b) Gavotte (Corelli); (c) Tambourin (Leclair); (d) Menuett (Haydn). 4. Sonata in G Major (Haydn).

FRANKFURT-AM-MAIN. Südwestdeutscher Rundfunk. W.L.: 423.6 m.; 4 kw.

Transmits at intervals from 6.45 a.m.

7.15 p.m.—Chess Lesson.

7.45 p.m.—Talk: "The Tariff Question in Modern Germany."

8.15 p.m.—Chamber Music.

9.30 p.m.—Concert relayed from Mannheim. 1. Song from "Donna Juanita" (Suppé). 2. Two Songs from "Eine Nacht in Venedig" (Joh. Strauss): (a) Hildes Venezia, (b) Treu sein, das kann ich nicht. 3. Tarantella from "Gasparone" (Müllöcker). 4. Duet from "Der Zigeunerbaron" (Joh. Strauss). 5. "Als mein Ahnl 20 Jahr" from "Der Vogelhändler" (Zeller). 6. "Hab' ich nur deine Liebe" from "Boccaccio" (Suppé). 7. "Stockfinster war die Nacht" from "Gasparone" (Müllöcker). 8. Vilja Song from "The Merry Widow" (Léhar).

11.0 p.m. (approx.)—Close Down.

HAMBURG. Norag (ha. in Morse). W.L.: 394.7 m.; 4 kw.

Transmits at intervals from 5.45 a.m.

6.30 p.m.—Chess Lesson.

7.0 p.m.—Talk: "Down to the Sea" by Dr. Philipp Heineken, President of the North-German Lloyd, relayed from Bremen (400 m.).

7.30 p.m.—Spanish Lesson.

7.55 p.m.—Weather.

8.0 p.m.—Prof. Fritz Stein on "Beethoven's Symphonies," with illustrations.

9.30 p.m.—Concert of Spring Songs. 1. Hoch Deutsches Lied (Hermann-Webau). 2. Frühlingsliebe (Schulz). 3. Im Holderstrauch. 4. (a) Mai-Tanzreigen, (b) Der Jäger längs dem Weher ging. 5. Im Wald und auf der Heide (Pölder). 6. Frühling (Regen). 7. (a) Wenn ich ein Vöglein wär, (b) Rosestock Holderblüh. 8. Rheinlieder (Hannemann). 9. Die Nachtigall (Mendelssohn). 10. (a) Du, du liegst mir am Herzen, (b) Ein Schäfermädchen weidete. 11. Frühlingsreigen. 12. Deutscher Liederstrauss.

10.30 p.m. (approx.)—Weather, Press and Sports News.

KOENIGSBERG. Ostmarken Rundfunk. W.L.: 329.7 m.; 4 kw.

Transmits at intervals from 10.15 a.m.

6.5 p.m.—Agricultural Notes.

6.10 p.m.—Short-wave Experiments.

6.40 p.m.—Talk: "East Prussian Poets of the Present Day."

7.10 p.m.—Talk: "German Proverbs."

7.40 p.m.—Talk: "The Classical Viennese Opera."

7.55 p.m.—Weather.

8.0 p.m.—"Der Bettel Student." Operetta (Müllöcker). Weather and News.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 468.8 m.; 25 kw.

Transmits at intervals from 1.5 p.m.

Programme from Cologne also relayed by Muenster on 241.9 m.

6.0 p.m.—Talk on "Dental Hygiene."

6.35 p.m.—Spanish Lesson.

7.20 p.m.—Talk on "Present Day Dependence on Industry and Agriculture."

7.45 p.m.—Talk: "The Principles of Political Economy."

8.15 p.m.—Robert Koppel Recital.

10.30 p.m. (approx.)—Sports Notes from Cologne.

12.0 (midnight) (approx.)—Close Down.

STUTT GART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw.

11.40 a.m.—Weather and News.

1.10 p.m.—Gramophone Selections.

3.50 p.m.—Wireless Notes.

4.15 p.m.—Concert. 1. Mit Mut und Kraft (Pöhler). 2. Mitternachts-walzer (Meyer-Helmund). 3. "Dein gedenk ich," from "Faust" (Meyer-Helmund). 4. "Tancred"—Overture (Rossini). 5. (a) Das Zauberlied, (b) Ballgefüster (Meyer-Helmund). 6. "La Tosca"—Selection (Puccini). 7. (a) Liebesbotschaft, (b) Rocco Serenade, (c) Rocco Love Song (Meyer-Helmund). 8. Centauren—Marsch (Pöhler).

6.0 p.m.—Time and News.

6.15 p.m.—Theatre Talk.

6.45 p.m.—Wireless Notes.

7.15 p.m.—Talk: "Einstein's Theory—Space and Time."

7.45 p.m.—Time, Weather and News.

8.0 p.m.—Symphony Concert. 1. "Ali Baba"—Overture (Cherubini). 2. Double—Concerto (Brahms).

9.30 p.m.—Concert relayed from Mannheim. 1. "Donna Juanita"—Song (Suppé). 2. "A Night in Venice"—Two Songs (Joh. Strauss). 3. "Gasparone"—Tarantella (Müllöcker). 4. "The Gipsy Baron"—Duet (Joh. Strauss). 5. "The Bird-Fancier"—Song (Zeller). 6. "Boccaccio"—Song (Suppé). 7. "Gasparone"—Duet (Müllöcker). 8. "The Merry Widow"—Vilja Song (Léhar). 9. "The Gelsa"—Couplet (Sullivan). 10. "Bruder Straubinger"—Terzet (Ed. Eisler). 11. "Opernball"—Duet (Heuberger).

HOLLAND

HILVERSUM. Hilversumsche Draadloze Omroep (HDO). W.L.: 1,060 m.; 5 kw.

12.40 p.m.—Police News.

1.15 p.m.—Music by the "Trianon" Trio.

4.10 p.m.—Talk for Women.

5.40 p.m.—Children's Corner.

6.40 p.m.—Concert: 1. "Orpheus in the Underworld"—Overture (Offenbach). 2. Musette (Offenbach). 3. Selection from the Works of Offenbach. 4. Barcarolle from the "Tales of Hoffmann" (Offenbach).

7.25 p.m.—Gardening Talk.

7.55 p.m.—Concert (continued).

8.25 p.m.—Police News.

8.50 p.m.—Dutch Town Series—An Evening at Helmond—In the Interval at 10.40.—News and Weather.

12.10 a.m. (Tuesday, April 26th approx.)—Close Down.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb. W.L.: 310 m. (275.2 m.); 0.35 kw.

5.0 p.m.—Concert by the Masarik-Vlahovic-Schild Trio.

6.45 p.m.—News.

NORWAY

OSLO. Kringkastingselskabet. W.L.: 461.5 m.; 1.5 kw.

6.40 p.m.—Elementary French Lesson.

7.15 p.m.—News.

7.30 p.m.—Elementary English Lesson.

8.0 p.m.—Time.

8.2 p.m.—Concert. 1. Marinarella—Overture (Fuck). 2. Bad'ner Mad'n (Komzak). 3. Divertissement Hongrois (Schubert). 4. Overture (Sodermann). 5. Berceuse (Sibelius).

9.0 p.m.—Technical Talk.

9.30 p.m.—Reading.

10.0 p.m.—News and Weather.

10.15 p.m. (approx.)—Close Down.

POLAND

WARSAW. Polskie Radio. W.L.: 1,111 m.; 10 kw.

Transmits at intervals from 3.0 p.m.

5.30 p.m.—Talk, "Sunnier Camps for Young People."

6.0 p.m.—Dance Music relayed from the "Café Gastronomja."

6.40 p.m.—Variety Items.

7.0 p.m.—Elementary French Lesson.

7.30 p.m.—Talk on "The Mountains of Poland."

7.55 p.m.—Agricultural Report.

8.30 p.m.—Concert from the Works of Beethoven. 1. Sonata for Violin, in D major, Op. 12, No. 1. 2. (a) Le guerrier, (b) La Gondoletta, (c) O Sanctissima. 3. (a) Finis de railleur, (b) Polly Stewart, (c) Harry. 4. Trio for Piano, Op. 70, No. 1.

SPAIN

BARCELONA. Radio Barcelona (EAJ1). W.L.: 344.8 m.; 1.5 kw.

12.0 (noon)—Chimes and Weather.

6.0 p.m.—Exchange Quotations.

6.10 p.m.—Station Quintet.

8.30 p.m.—Talk: "How the Teeth Decay and How they are Cured."

9.10 p.m.—Humorous Review of the Week's Events, in Verse.

9.20 p.m.—Orchestral Selections.

10.0 p.m.—Chimes and Weather.

10.10 p.m.—Song Recital (Soprano).

10.40 p.m.—Quintet Selections.

11.0 p.m. (approx.)—Close Down.

CADIZ. Union Radio (EAJ3). W.L.: 362 m. (297); 0.55 kw.

7.5 p.m.—Vocal and Instrumental Concert. 1. Pepe Gallardo—Organ Solo (Chapi). 2. Selection from "Gigantes y Cabezones" (Caballero). 3. Song Recital, by Miss Diana Smith. In the intervals: Pianoforte Solos.

7.50 p.m.—News.

8.0 p.m.—Time.

8.2 p.m.—French Lesson.

8.18 p.m.—Violin Recital.

9.0 p.m. (approx.)—Close Down.

12.0 (midnight)—Experimental Transmission.

MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.

11.45 a.m.—Time, Astronomy and Commerce Notes, Exchange Quotations and News.

2.0 p.m.—Concert by the "Arty's" Orchestra. In the Interval: Theatre Notes, Weather and News.

6.30 p.m.—Esperanto Lesson.

7.0 p.m.—Concert.

9.30 p.m.—French Lesson.

10.30 p.m.—Close Down.

SWITZERLAND

BERN. Radio-Bern. 411 m.; 6 kw.

Transmits at intervals from 1.0 p.m.

7.30 p.m.—Time and Weather.

7.35 p.m.—Talk.

8.0 p.m.—"Über den Wassern." Drama (George Engel).

9.20 p.m.—The Kursaal Orchestra.

9.50 p.m.—News and Weather.

10.5 p.m. (approx.)—Close Down.

LAUSANNE. Société Romande de Radiophonie (HB2). W.L.: 850 m.; 1.5 kw.

7.45 a.m.—Weather Forecast.

8.0 p.m.—Chimes and Weather.

8.2 p.m.—Literary Talk on "Carl Spitteler."

8.30 p.m.—Concert by the Zavadini Orchestra, from the Old India Restaurant. 1. Marche des Midgettes (Billi). 2. Roses of the South—Waltz (Strauss). 3. Les Cent Vierges (Lecoec). 4. Vera Scheloga—Cradle Song (Rimsky-Korsakov). 5. Vitka (Barch). 6. The Torador and the Andalusian Girl (Rubinstein).

ZURICH. Radio Genossenschaft. W.L.: 496 m.; 1 kw.

Transmits at intervals from 12.30 p.m.

7.57 p.m.—Time and Weather.

8.0 p.m.—Concert.

9.50 p.m.—News and Weather.

10.0 p.m.—Dance Music.

10.30 p.m. (approx.)—Close Down.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 309.1 m. and 64 m.; 25 kw.

Transmits at intervals from 3 p.m.

11.0 p.m.—Concert by the Studio Ensemble.

12.15 a.m. (Tuesday, April 26th)—Talk relayed from Pittsburgh University.

12.30 a.m.—"Roxey and his Gang," relayed from New York.

2.0 a.m.—"Record Boys," relayed from New York.

2.30 a.m.—Selections of Light Opera Music relayed from New York, followed by Time and Weather.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.

Transmits at intervals from 4.30 p.m.

10.30 p.m.—Orchestral Selections, relayed from the Hotel Van Curler.

11.25 p.m.—Baseball Results.

1.0 a.m. (Tuesday, April 26th)—Relay of Programme in celebration of the Twenty-Fifth Anniversary of the United Press. Speech by President Coolidge.

PROGRAMMES FOR TUESDAY

(April 26)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2RN). W.L.: 319.1 m.; 1.5 kw.
 1.30 p.m.—Stock Exchange Quotations and News, followed by Gramophone Records.
 6.30 p.m.—Children's Corner.
 7.0 p.m.—Gramophone Concert.
 7.25 p.m.—Stock Exchange List and News.
 7.30 p.m.—Fainne Talk, by Tomas O Loidcan.
 7.45 p.m.—Spanish Lesson by W. Starkie, LL.D.
 8.0 p.m.—Programme relayed from Waterford Town Hall. Concert by the Waterford Instrumental Society.
 10.30 p.m.—Weather Forecast.
 10.40 p.m. (approx.)—Close Down.

AUSTRIA

VIENNA. Radio-Wien. W.L.: 577 and 517.2 m.; 1.5 and 5 kw.
 Transmits at intervals from 11.0 a.m.
 6.0 p.m.—"Die Frau ohne Schatten"—Opera (Strauss).

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5 m.; 1.5 kw.
 Transmits at intervals from 5.0 p.m.
 7.30 p.m.—"Radio-Chronique."
 8.0 p.m.—Cello Quartet Selections.
 8.20 p.m.—Talk on "The Art of the Motion Picture."
 8.35 p.m.—Tenor Solos.
 9.0 p.m.—Topical Talk.
 9.15 p.m.—Dance Music.
 10.30 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw.
 Programme relayed by Soro (1,153 m.)
 3.0 p.m.—Tea Concert.
 5.30 p.m.—Children's Corner.
 6.0 p.m.—Time and Chimes from the Town Hall.
 6.30 p.m.—Advanced German Lesson.
 7.0 p.m.—News, Exchange and Time.
 7.30 p.m.—Talk.
 8.0 p.m.—Gaiety Concert. Orchestral Selections: 1. (a) Marche Parisienne (Ganne), (b) Tango (Andersen), (c) The Washington Post (Souza), 2. Arvid Ringheim (Elocutionist)—Songs: (a) Ganske stille (Henderson), (b) Landergren—Swedish Melody, (c) Andrea (Hanley), 3. Axel Boesen (Elocutionist), 4. Arvid Ringheim (Elocutionist), 5. Songs: (a) Det er jeg ogsaa (Kjerulf), (b) E' fin vise (Hallden), (c) Hajuu (Grüber-Rhode), 6. Axel Boesen (Elocutionist).
 9.15 p.m.—Talk for Housewives.
 9.20 p.m.—Wireless Notes and News.
 9.45 p.m.—Concert of Danish Music. 1. "Youth and Madness"—Overture (Dupuy), 2. Songs: (a) Air from "Youth and Madness," (b) Air from "Macbeth," 3. "Festival in Kenilworth"—Overture (Weyse), 4. Songs: (a) In the Land of the Saxons (Weyse), (b) Air from "The Masquerade" (Nielsen), 5. "The Masquerade"—Dance.

FRANCE

PARIS. Ecole Supérieure (FPTT). W.L.: 464 m.; 0.5 kw.
 Transmits at intervals from 8.0 a.m.
 8.0 p.m.—English Lesson arranged by the Berlitz School.
 9.0 p.m.—Concert followed by talk on "Foreign Affairs," and News.
PARIS. Eiffel Tower (FL). W.L.: 2,650 m.; 5 kw.
 10.26 a.m.—Time Signal.
 6.45 p.m.—"Le Journal Parlé."
 8.0 p.m.—Weather.
 8.15 p.m.—Concert.
 9.15 p.m.—Educational Programme.
 11.26 p.m.—Time Signal.
PARIS. Petit Parisien. W.L.: 340.9 m.; 0.5 kw.
 9.0 p.m.—Concert. 1. Colomba—Prelude (Busser), 2. Gretna Green—Selections (Guiraud), 3. Selection (Laparra), 4. Conte d'Avril (Widor), 5. Children's Corner—Suite (Debussy), 6. Les Tambourinaires et la Provençale de la Farandole (Dubois), 7. Fest Marsch (Napravnik).
PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.

10.30 a.m.—News, Exchange Quotations, and Musical Selections.
 12.30 p.m.—Concert. 1. Lecon d'Amour—Boston (Bozi), 2. Consolation (Liszt-Salabert), 3. Sonata (Schumann), 4. Si j'étais jardinier (Chaminade), 5. La Tosca—Prayer (Puccini), 6. L'Enfant Prodigue—Air (Debussy), 7. (a) Miki mon chat blanc (Marot), (b) Arabesque (Schumann), 8. Rose Marie—Selection (Friml-Salabert), 9. Jupiter Symphony (Mozart), 10. Cavalleria Rusticana—Song (Masegni), 11. Hans, the Flute Player (Ganne), 12. Mauresque (Granados), 13. Romance (Julien), 14. Bunny (Porret), 15. Marche de Bravoure (Schubert).
 1.50 p.m.—News.
 4.30 p.m.—Exchange Quotations.
 4.45 p.m.—Concert.
 5.35 p.m.—Market Prices.
 7.40 p.m.—Topical Talk.
 8.0 p.m.—Exchange Quotations and News.
 8.30 p.m.—Economics Talk, "The Administration and Exploitation of Ports of Commerce."
 8.45 p.m.—Concert.

TOULOUSE. Radiophonie du Midi. W.L.: 389.6 m.; 2 kw.
 5.0 p.m.—Exchange Quotations and News.
 5.35 p.m.—Agricultural Report.
 8.0 p.m.—Exchange Quotations and News.
 8.45 p.m.—Concert. Arranged by "La Lampe Radiotechnique." "Le Poste de Secours"—Play (Phalippou) and Selected Music. 1. Under the Blue Sky (Petit), 2. Italian Overture (Zerco), 3. Les Cloches de Corneville (Planquette), 4. Clarinette Solo (Pirouelle), 5. Selection from "The Caliph of Bagdad" (Boieldieu), 6. Brise d'Amour (Allier), 7. Brigade (Tourmier).

GERMANY

BERLIN. Koenigswusterhausen. W.L.: 1,250 m.; 8 kw.
 Transmits at intervals from 4.0 p.m.
 5.0 p.m.—Talk on "State Politics."
 5.30 p.m.—Talk, "The Importance of Logical Thinking in Science and Life."
 6.0 p.m.—Talk.
 6.30 p.m.—Elementary Spanish Lesson.
 6.55 p.m.—Talk, "Germany's Share in World Exploration—The Expedition to Central Africa."
 7.20 p.m.—Talk on "German Songs before the Time of Schubert."
 8.15 p.m.—Programme relayed from Voxhaus.
BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw.
 Transmits at intervals from 10.10 a.m.
 6.0 p.m.—Household Hints, Theatre and Film Notes.
 6.20 p.m.—Review of Books.
 6.50 p.m.—Talk, "The Tonisols."
 7.15 p.m.—Talk, "Youth in Distress."
 7.45 p.m.—Talk, "Health Insurance."
 8.15 p.m.—Introductory Notes to following broadcast.
 8.30 p.m.—Orchestral Concert. 1. Symphony in E flat major (Mozart), 2. Symphony No. 7 in C major (Schubert).
 10.15 p.m. (approx.)—Weather and News.

BRESLAU. Schlesische Funkstunde. W.L.: 315.8 m.; 4 kw.
 3.45 p.m.—Children's Corner. Relayed from Gleiwitz (250 m.)
 4.30 p.m.—Concert. 1. Künstlerblut (Blankenburg), 2. Operetta Overture (Moussorgsky), 3. Frühlingstimmen (Lincke), 4. In der Krim (J. Strauss), 5. Mazurka (Wienlowski), 6. Vision (Schmalstich), 7. Paraphrase on the song "La Paloma" (Mannfred), 8. Sabot Dance (Fétras), 9. Seid einig (Schicke).
 6.0 p.m.—Talk.
 7.0 p.m.—Talk, "The Feeling of Gullt."
 7.35 p.m.—Talk, "The History of Breslau."
 8.15 p.m.—Concert. 1. Paris (Padilla), 2. Humorous Selections, 3. Deine Augen sind ein Rundfunk (Kollo), 4. Humorous Selections, 5. Turkish Towel Foxtrot (Mill), 6. Humorous Selections, 7. Springtime Foxtrot (Robrecht), 8. Humorous Selections, 9. Mammy Blues (Wottfik).
 10.15 p.m.—Wireless Notes.

FRANKFURT-am-MAIN. Südwestdeutscher Rundfunk. W.L.: 428.6 m.; 4 kw.
 Transmits at intervals from 6.45 a.m.
 5.45 p.m.—Reading from Mann's "Die Buddenbrucks."
 6.15 p.m.—Talk, "Stammoring."
 6.45 p.m.—English Literary Selections.
 7.0 p.m.—English Lesson.
 7.30 p.m.—Organ Recital, followed by relay from Cassel (272.7 m.).

HAMBURG. Norag (ha, in Morse). W.L.: 394.7 m.; 4 kw.
 Transmits at intervals from 5.45 a.m.
 6.50 p.m.—Talk, "Physical Culture."
 7.10 p.m.—Musical Lecture, "From Cameroon to South-West Africa."
 7.55 p.m.—Talk.
 7.55 p.m.—Weather.
 8.0 p.m.—Song Recital by Maria Hussa-Greve (Soprano). 1. Air from "Manon" (Puccini), 2. Cradle Song from "Schatzgräber" (Schreker), 3. Leonore's Song from "The Force of Destiny" (Verdi), 4. Hallen-Arie (Wagner), 5. Desdemona's Prayer from "Othello" (Verdi).
 9.0 p.m.—Violin Recital, by Prof. Georg Herbst, relayed from Bremen (400 m.).
 10.30 p.m. (approx.)—Concert from the Alster Pavilion. Weather and News.
 11.50 p.m.—Ice Report.
 12.0 (midnight, approx.)—Close Down.

KOENIGSBERG. Ostmarken Rundfunk. W.L.: 329.7 m.; 4 kw.
 Transmits at intervals from 10.15 a.m.
 6.5 p.m.—Agricultural Notes.
 6.30 p.m.—Talk on "Agriculture."
 7.0 p.m.—Talk.
 7.50 p.m.—Esperanto Lesson.
 7.55 p.m.—Weather.
 8.0 p.m.—"Der Wettlauf mit dem Schatten"—Play (Wilhelm von Scholz).
 9.35 p.m.—Orchestral Concert.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 468.8 m.; 25 kw.
 Transmits at intervals from 1.5 p.m.
 Programme also relayed by Muenster on 241.9 m.
 6.0 p.m.—Spanish Lesson from Muenster.
 6.25 p.m.—Talk from Cologne.
 6.45 p.m.—Readings from the Works of Hans Wetz by the author.
 7.30 p.m.—Agricultural Notes and Weather, from Cologne.
 7.40 p.m.—Concert from Cologne.
 8.15 p.m.—Programme from Düsseldorf. 1. Symphony in C (Rossetti), 2. Symphony in C, Op. 16, No. 3 (Luigi), 3. Symphony in C (Von Dittersdorf).
 10.15 p.m.—Press and Sports Notes.
 10.20 p.m. (approx.)—Close Down.

LEIPZIG. Mitteldeutscher Rundfunk. W.L.: 365.8 m.; 4 kw.
 Transmits at intervals from 10.0 a.m.
 6.30 p.m.—Elementary Spanish Lesson relayed from Koenigswusterhausen, 1,250 m.
 7.0 p.m.—Talk, "Long Distance Supplies of Electric Current."
 7.30 p.m.—Talk, "Long Distance Gas Supplies."
 8.0 p.m.—Weather and Time.
 8.15 p.m.—Concert of Music for Young People.
 10.0 p.m.—Press and Sports News.
 10.15 p.m.—Concert.
 12.0 (midnight) (approx.)—Close Down.

STUTTART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw.
 11.40 a.m.—Weather and News.
 1.10 p.m.—News and Gramophone Selections.
 3.50 p.m.—Review of Books.
 4.15 p.m.—Concert: 1. Piastengruss—March (Preis), 2. Maienkinder—Waltz (Siede), 3. Duet for Violin and Viola (Bruni), 4. "The Italian in Algiers"—Overture (Rossini), 5. "Sameon and Delilah" (Saint-Saëns), 6. "Der Hochzeitstag des Maharadscha—Intermezzo (Storck), 7. (a) Liebesballade, (b) Kuss—Serenade (Micheli), 8. Triumpfmarsch (Preis).
 6.0 p.m.—Time, Weather and Agricultural Notes.
 6.15 p.m.—Talk: "Ludwig Uhland."
 6.45 p.m.—Morse Lesson.

7.15 p.m.—Talk: "A Diplomat's Breakfast with Emperor Menelik of Abyssinia."
 7.45 p.m.—Time, Weather and Wireless Notes.
 8.0 p.m.—"The Merry Widow"—Operetta (Léhar), News.

HOLLAND

HILVERSUM. Hilversumsche Draadloze Omroep (HDO). W.L.: 1,060 m.; 5 kw.
 12.40 p.m.—Police News.
 1.15 p.m.—Programme of Music.
 5.40 p.m.—Concert by the Station Orchestra. 1. Michael Angelo—Overture (Gade), 2. Suite Fantaisiste (Marie), 3. Air from the Cantata No. 21 (Bach), 4. Selection from the Cantata No. 100 (Bach), 5. Serenade (Pares), 6. Selection from "Faust" (Gounod), 7. Pensée élegiaque (Ancel), 8. Spring, 9. "Le Cygne" and "En Bateau" (Grieg), 10. Donauwellen—Waltz (Ivanovitch), 11. Patrouille—Infantion (Gillet).
 7.25 p.m.—English Lesson.
 8.25 p.m.—Police News.
 8.55 p.m.—Programme arranged by the Roman Catholic Radio Society. In the interval at 10.50—News and Weather.
 11.20 p.m. (approx.)—Close Down.

HUNGARY

BUDAPEST. Magyar Radio Ujsag. W.L.: 555.5 m.; 3 kw.
 6.20 p.m.—Wireless Talk.
 7.0 p.m.—"A kerok." Play in Three Acts (Karoly).
 10.30 p.m.—Gipsy Music, followed by Dance Music from the Hotel Britannia.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb. W.L.: 310 m. (275.2 m.); 0.35 kw.
 6.30 p.m.—Esperanto Lesson.
 8.30 p.m.—Song Recital. 1. Ein Glas Wein (Sachs), 2. Die Uhr (Lowe), 3. Ich liebe dich (Grieg), 4. Frühlingslied (Mendelssohn), 5. Drei wanderer (Hermann), 6. Tannhäuser—Aria (Wagner), 7. The Masked Ball—Aria (Verdi), 8. Carmen—Selection (Bizet).
 9.45 p.m.—News.

NORWAY

OSLO. Kringkastingselskapet. W.L.: 461.5 m.; 1.5 kw.
 6.45 p.m.—Talk.
 7.15 p.m.—News.
 7.30 p.m.—Advanced English Lesson.
 8.0 p.m.—Time.
 8.2 p.m.—Concert: 1. La Princesse Jaune—Overture (Saint-Saëns), 2. To You (Waldteufel), 3. Symphony in E Flat Minor (Mozart), 4. Der Gegenmacher aus Cremona (Hubay).
 9.0 p.m.—Talk on "The French Art Exhibition."
 9.30 p.m.—Concert.
 10.0 p.m.—News and Weather.
 10.15 p.m. (approx.)—Close Down.

POLAND

WARSAW. Polskie Radio. W.L.: 1,111 m.; 10 kw.
 Transmits at intervals from 3.0 p.m.
 5.15 p.m.—Concert of Light Music.
 6.40 p.m.—Variety Items.
 7.0 p.m.—Talk.
 7.30 p.m.—Talk, "In the Land of the Moors."
 7.55 p.m.—Agricultural Report.
 8.30 p.m.—Concert. 1. Visions de Nuremberg (Foulds), 2. Fêtes à Nuremberg (Foulds), 3. The Bohemian Girl—Selection (Balfe), 4. Le Solr à Odensvald, 5. Les Cloches à Coblenz, 6. Concerto in G minor for Violoncello (Goitermann), 7. Robespierre—Overture (Litolff), 8. Prelude (Svendsen), 9. Suite Espagnole (Lacome), 10. Los Tornos, 11. La Reja, 12. La Larzuela.

SPAIN

BARCELONA. Radio Barcelona (EAJT). W.L.: 344.8 m.; 1.5 kw.
 12.0 (noon)—Chimes and Weather.
 6.0 p.m.—Exchange Quotations.
 6.40 p.m.—Selections by the Station Quintet.
 6.40 p.m.—Fashion Review.
 8.30 p.m.—Morse Lesson.
 9.10 p.m.—Selections by the "Demons Jazz" Orchestra.
 10.0 p.m.—Chimes and Weather.
 10.5 p.m.—Programme relayed from Union Radio, Madrid (EAJ7), 375m.

GADIZ. Union Radio (EAJ3). W.L.: 362 m. (297); 0.55 kw.
 7.5 p.m.—Concert. 1. Selection from Gigantes and Cabezudos (Caballero), 2. "La Viejecita"—Duet (Caballero), 3. Song Recital by Sta. Pepita Munoz—In the intervals—Cello Solos.
 7.50 p.m.—News.
 8.2 p.m.—Concert by the Station Orchestra.
 9.0 p.m. (approx.)—Close Down.
 12.0 (midnight)—Experimental Transmission.
MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.
 11.45 a.m.—Time, Weather, Astronomy and Commerce Notes, Exchange Quotations and News.
 2.0 p.m.—Concert by the "Arty's" Orchestra. In the intervals: Theatre Notes, Weather and News.
 6.30 p.m.—Lesson in Castilian.
 8.2 p.m.—Concert.
 9.30 p.m.—English Lesson.
 10.0 p.m.—Time and Exchange Quotations.
 10.5 p.m.—Concert by the Madrid Symphony Orchestra.
 12.20 a.m. (Wednesday, April 27th).—News.
 12.30 a.m. (approx.)—Close Down.

SWITZERLAND

BERN. Radio-Bern. W.L.: 411 m.; 6 kw.
 Transmits at intervals from 1.0 p.m.—Time and Weather.
 7.35 p.m.—Talk.
 8.0 p.m.—Concert.
 9.50 p.m.—News and Weather.
 10.30 p.m. (approx.)—Close Down.

GENEVA. Radio-Geneva. W.L.: 760 m.; 1.5 kw.
 8.15 p.m.—Exchange, Time and Weather.
 8.20 p.m.—Programme relayed from Lausanne (850 m.).
 9.20 p.m.—Gramophone Selections.
 9.50 p.m.—News.

LAUSANNE. Société Romande de Radiophonie (HB2). W.L.: 850m; 1.5 kw.
 7.45 p.m.—Weather Forecast.
 8.0 p.m.—Chimes and Weather.
 8.2 p.m.—Concert by the "Decosterd Orchestra." 1. Suite from "Pique Dame" (Tchaikovsky), 2. Scène passionnée (Becca), 3. Mireille—Selection (Gounod), 4. "The Angel" (Wagner), 5. Yelba—Overture (Reissiger).
 8.50 p.m.—Violin Recital.
 9.20 p.m.—Literary Talk.

ZURICH. Radio Genossenschaft. W.L.: 496 m.; 1 kw.
 Transmits at intervals from 12.30 p.m.
 7.57 p.m.—Time and Weather.
 8.0 p.m.—Programme relayed from the Tonhalle, Zurich.
 9.0 p.m.—News and Weather.
 10.0 p.m. (approx.)—Close Down.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 309.1 m. and 64 m.; 25 kw.
 Transmits at intervals from 3.0 p.m.
 11.0 p.m.—Concert.
 12.0 (midnight)—Sacred Song Recital.
 12.30 a.m. (Wednesday, April 27th).—Agricultural Report.
 12.45 a.m.—First National "To-be Weds."
 1.0 a.m.—Orchestral Selections, relayed from New York.
 2.0 a.m.—Opera Selections, relayed from New York.
 3.0 a.m.—"Don Amazo," relayed from New York.
 3.30 p.m.—"Music Lover's Hour," relayed from Pittsburgh Musical Institute.
 4.35 p.m.—Concert relayed from the Grand Theatre.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.
 Transmits at intervals from 3.0 p.m.
 11.25 p.m.—Baseball Results.
 11.30 p.m.—Talk, "Psychology and Evolution."
 11.45 p.m.—Studio Programme.
 12.0 (midnight)—Elementary French Lesson.
 12.30 a.m. (Wednesday, April 27th).—Harmony Twins.
 4.0 a.m.—"Eveready Hour," relayed from New York.
 2.0 a.m.—"Radio Cavalcade," relayed from New York.

PROGRAMMES FOR WEDNESDAY

(April 27)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2 RN). W.L.: 319.1 m.; 1.5 kw.

1.30 p.m.—Stock Exchange Quotations, News, Weather, and Gramophone Records.

6.30 p.m.—Children's Corner.

7.0 p.m.—Talk for Women.

7.25 p.m.—Stock Exchange Quotations and News.

7.30 p.m.—Irish Lesson by Michael O'Maolain as Arainn.

7.45 p.m.—German Lesson by Olga von Wenckstern.

8.0 p.m.—Solos and Duets by Norrie Finn (Contralto), and P. J. O'Toole (Tenor).

8.25 p.m.—Concert by the Station Orchestra.

8.45 p.m.—Pianoforte Solos.

9.0 p.m.—Scenes from "Twelfth Night" (Shakespeare), by Mary O'Hea and Co.

9.30 p.m.—Vocal Solos by Eileen Hayden (Soprano).

9.50 p.m.—"The Ballad History of Ireland" — by John Brennan, with Illustrations by Gerald Crofts (Tenor).

10.10 p.m.—Cello Solos by Wm. Reidy.

10.20 p.m.—Concert by the Station Orchestra.

10.30 p.m.—Weather.

10.40 p.m. (approx.)—Close Down.

AUSTRIA

GRAZ. Oest Radio Verkehrs. W.L.: 358 m.; 0.5 kw.

8.5 p.m.—Concert. 1. "Euryanthe" — Overture (Weber). 2. Symphony No. 1 in E Flat (Haydn). 3. Minuet and Finale from the Symphony in B Major (Schumann). 4. Prelude and Entr'acte Music from "Corregidor" (Wolf). 5. German Dances (Beethoven). 6. "Leonora" — Overture No. 2.

VIENNA. Radio-Wien. W.L.: 577 and 517.2 m.; 1.5 and 5 kw.

Transmits at intervals from 11.0 a.m. to 11.0 p.m.—Agricultural Talk.

6.40 p.m.—Talk.

7.10 p.m.—Advanced French Lesson.

7.40 p.m.—Elementary English Lesson.

8.5 p.m.—Reading of Poems from the Works of Anton Wildgans.

9.5 p.m.—Concert from the Works of Schumann, Brahms and Dvorak.

10.5 p.m. (approx.)—Concert of Light Music.

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5 m.; 1.5 kw.

Transmits at intervals from 5.0 p.m. to 7.30 p.m.—"Radio-Chronique."

8.0 p.m.—Organ Recital.

8.45 p.m.—Gramophone Concert.

9.0 p.m.—Selections from "Le Châlet" — Opera-Comique (Adam).

10.0 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw.

Programme relayed by Soro (1,153 m.)

6.0 p.m.—Time and Chimes from the Town Hall.

6.5 p.m.—Programme for Boys.

7.0 p.m.—News, Exchange and Time

7.20 p.m.—Talk.

7.50 p.m.—Introductory Notes to following broadcast.

8.0 p.m.—"The Barber of Seville" — Opera (Rossini). Relayed from the New Theatre. News.

FRANCE

PARIS. Ecole Supérieure (FPTT). W.L.: 464 m.; 0.5 kw.

Transmits at intervals from 8.0 a.m. to 8.0 p.m.—Talk on "Bulbs."

8.15 p.m.—Educational Talk.

8.45 p.m.—Programme relayed from the Sorbonne on the occasion of the inauguration of the "Maison de la Chimie."

10.0 p.m. (approx.)—News, followed by Dance Music.

12.0 (midnight, approx.)—Close Down.

PARIS. Eiffel Tower (FL). W.L.: 2,650 m.; 5 kw.

10.26 a.m.—Time Signal.

6.45 p.m.—"Le Journal Parlé."

8.0 p.m.—Weather.

8.15 p.m.—Concert.

9.15 p.m.—Educational Programme.

11.26 p.m.—Time Signal.

PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.

10.30 a.m.—News, Exchange Quotations, and Musical Selections.

12.30 p.m.—Concert arranged by "La Parisienne Edition." 1. Ad Lib—One Step (Waltham). 2. Lison Enjôleuse—Boston (Margis). 3. Les Romanesques—Overture (Smet). 4. Chant. 5. Aïda—Selection (Verdi). 6. Sous l'Ombré—Fox-trot (Chaura). 7. Les Saltimbanques — Selection (Ganne). 8. Dame un beso (Valverde). 9. Lolita—Serenata (Ferrette). 10. Toledo—Spanish March (Mac Lherty).

1.50 p.m.—News.

4.30 p.m.—Exchange Quotations.

4.45 p.m.—Concert. 1. Nais Micoulin—Prelude (Labis). 2. Prelude (Rachmaninoff). 3. Danse du Souper (Charmettes). 4. Poënie Automnal (Grecourt). 5. Madame Cupidon—Selection (Delsaux).

5.35 p.m.—Market Prices.

7.30 p.m.—Colonial News and Topical Talk.

8.0 p.m.—Exchange Quotations and News.

8.30 p.m.—Talk on "Electricity."

8.45 p.m.—Concert arranged by "L'Echo de Paris." In the Intervals: News.

TOULOUSE. Radiophonie du Midi. W.L.: 389.6 m.; 2 kw.

5.35 p.m.—Agricultural Report.

8.0 p.m.—Time, Stock Exchange Quotations and News.

8.45 p.m.—Concert arranged by "La Radio Selection" and "La Lampe M.S." Selection from "Les Linottes"—Operetta in Three Acts.

GERMANY

BERLIN. Koenigswusterhausen. W.L.: 1,250 m.; 8 kw.

Transmits at intervals from 12.0 (noon).

5.0 p.m.—Talk on "Plant Life."

5.30 p.m.—Talk on "Arnold Mendelssohn, on his Seventieth Birthday."

6.0 p.m.—Talk, "Surface and Space Measurement."

6.30 p.m.—Elementary English Lesson.

6.55 p.m.—Talk on "The Organization and Present Day Position of the Agricultural Credit System."

7.20 p.m.—Talk, "The Beginning of the Modern State."

9.0 p.m.—Programme relayed from Voxhaus.

BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw.

Transmits at intervals from 10.10 a.m.

8.0 p.m.—Household Hints, Theatre and Film Notes.

6.30 p.m.—Talk, "The Metal Industry."

7.5 p.m.—Talk, "The Economic Position in Germany."

7.30 p.m.—Talk, "The Problem of German Working Hours."

8.0 p.m.—Reading from Nietzsche's "Also sprach Zarathustra."

8.30 p.m.—Current Legal Questions.

9.0 p.m.—Concert. 1. The Orchestra: "Komm wilde Rose von Santa Fe" (Stolz). 2. Tenor Solos: (a) Ich hab' heut Nacht vom Rhein geträumt (Egan), (b) Wir leben wir lieben (Kronberger), (c) In der Pfalz (Benes). 3. The Orchestra: Treulleben (Waldteufel). 4. Tenor Solos: (a) Mammy, fur mich bist du die Schönste Frau der Welt (Wottitz), (b) Lass mich im Frühling nicht Allein (Heymann). 5. The Orchestra: (a) "Napolitana" from "Der Zarewitsch" (Léhar), (b) Jalousie (Gade). 6. Tenor Solos: (a) Colette und der Mond (Bransen), (b) In Werder weiss ich ein kleines Haus (Stransky), (c) Willi, Will, vollst du denn so schnell bloss hin? (Lindemann). 7. The Orchestra—Wie einst im Mai (Robrecht).

10.15 p.m.—Weather and News.

10.30 p.m.—Dance Music.

12.30 a.m. (Thursday) (approx.)—Close Down.

BRESLAU. Schlesische Funkstunde. W.L.: 315.8 m.; 4 kw.

12.0 (noon)—Concert. 1. "Czar and Carpenter"—Overture (Lortzing). 2. "The Little Duke"—Selection (Lecoq). 3. Polenblut—Waltz (Nedbal). 4. "Rosamunde"—Ballet Music (Schubert).

4.30 p.m.—Concert of Viennese Music. 1. Herzog Albrecht March (Komzak). 2. Weanerstadt (Benatzky). 3. Am Strand der Donau (Binder). 4. Alt-Wiener Tanzweisen—Violin Solo (Kreislter).

5. "Jedes kleines Mädchen träumt davon" — from "Das Schwalbennest" (Granchstatten). 6. Sonang ein junger Wien ist (Benatzky). 7. Folk Music (Komzak). 8. Mei Mittler war a Weanerln (Gruber). 9. Heut geht's los (Fall). 6.0 p.m.—Review of Books.

7.0 p.m.—English Reading: Douglas Yates, M.A., reads from Wells's "The Country of the Blind."

7.25 p.m.—Elementary English Lesson.

8.15 p.m.—Pianoforte Recital.

FRANKFURT-am-MAIN. Südwestdeutscher Rundfunk. W.L.: 428.6 m.; 4 kw.

Transmits at intervals from 6.45 a.m. to 6.15 p.m.—Reading.

7.15 p.m.—Talk on Natural Science.

7.30 p.m.—Orchestral Concert.

8.0 p.m. (approx.)—Concert of Classical Waltzes.

HAMBURG. Norag (ha. in Morse). W.L.: 394.7 m.; 4 kw.

Transmits at intervals from 5.45 a.m.

6.0 p.m.—Concert. 6.50 p.m.—Talk. "Claus Groth," relayed from Kiel (254.2 m.).

7.10 p.m.—Legal Talk.

7.35 p.m.—Talk. "The Rights and Duties of Guardians and Wards," relayed from Hanover (297 m.).

7.55 p.m.—Weather.

8.0 p.m.—Three Short Plays. (a) "Der Better aus Bremen" (Körner), (b) "Die Geschwister" (Goethe), (c) "Der Nachtwächter" (Körner).

10.30 p.m. (approx.)—Concert from the Café Wallhof. Weather and News.

11.50 p.m.—Ice Report.

12.0 (midnight, approx.)—Close Down.

KOENIGSBERG. Ostmärker Rundfunk. W.L.: 329.7 m.; 4 kw.

Transmits at intervals from 9.0 a.m. to 6.5 p.m.—Agricultural Notes.

6.30 p.m.—Talk, "Political Geography."

7.0 p.m.—Talk, relayed from Danzig (272.7 m.).

7.30 p.m.—Elementary English Lesson.

8.10 p.m.—Weather.

8.15 p.m.—Introductory Notes on following broadcast.

9.0 p.m.—Concert relayed from Danzig, followed by Weather and News.

10.30 p.m. (approx.)—Dance Music.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 468.8 m.; 25 kw.

Transmits at intervals from 1.30 p.m. Programme also relayed by Muenster on 241.9 m.

6.0 p.m.—Gardening Hints, from Cologne.

6.10 p.m.—Photography Talk, from Dortmund, 283 m.

6.35 p.m.—Talk on "Diseases of Plants," from Cologne.

7.15 p.m.—Talk. "Philosophy," from Dortmund.

7.40 p.m.—Talk on "The Art of Forgiveness," from Muenster.

8.15 p.m.—Concert from Dortmund, of German Folk Music.

10.45 p.m.—Press and Sports News.

11.0 p.m.—Concert from the Café Corso, Dortmund.

12.0 (midnight, approx.)—Close Down.

LEIPZIG. Mittelddeutscher Rundfunk. W.L.: 365.8 m.; 4 kw.

Transmits at intervals from 10.0 a.m. to 6.30 p.m.—Elementary English Lesson relayed from Koenigswusterhausen, 1,250 m.

7.0 p.m.—Talk, "Foot Ailments."

7.30 p.m.—Talk on "Railway Stations in Poetry."

8.0 p.m.—Weather and Time.

6.15 p.m.—Concert of Music and Recitations.

10.0 p.m.—Press and Sports News.

10.15 p.m.—Cabaret Concert.

12.0 (midnight)—Close Down.

STUTTGART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw.

11.40 a.m.—Weather and News.

1.10 p.m.—News and Gramophone Selections.

3.0 p.m.—Children's Corner.

3.50 p.m.—Agricultural Notes.

4.15 p.m.—Concert. 1. "Die Matrone"—Overture (Flotow). 2. Deutsche Gräuse (Strauss). 3. Three Songs without Words (Mendelssohn). 4. "Martha"—Selection (Flotow). 5. "Albin"—

Overture (Flotow). 6. "Alessandro Stradella" (Flotow). 7. (a) Mélodie; (b) Albumblatt; (c) Im Balladenton (Grieg). 8. "Indra"—Overture (Flotow). 6.0 p.m.—Time, Weather and Agricultural Notes.

6.15 p.m.—Talk, "Industry and an International Language."

6.45 p.m.—Talk, "Wireless Reception."

7.15 p.m.—Time, Weather and Agricultural Notes.

7.30 p.m.—Max Reger Concert. Relayed from Frankfurt (428.6 m.)

8.0 p.m. (approx.)—"Valencia" — Radio Comedy (Paul Altheer) and "Neun Uhr" (Ashurst).

11.0 p.m.—News.

11.15 p.m. (approx.)—Close Down.

HOLLAND

HILVERSUM. Hilversumsche Draadlooze Onroep (HDO). W.L.: 1,060 m.; 5 kw.

12.40 p.m.—Police News.

1.15 p.m.—Music by the "Trianon" Trio.

2.40 p.m.—English Lesson for Children.

3.40 p.m.—Fashion Review.

6.10 p.m.—Concert by the Station Orchestra. 1. "The Golden Cross"—Overture (Brull). 2. Selection from "Djamileh" (Bizet). 3. Dutch and Flemish Songs: (a) "May," (b) "In the Wood" (Rijken), (c) Dance (Reckers), (d) Remembrance (Reckers), (e) My Tientje (Hullebroeck). 4. Orchestral Selection — Badner Madeln (Komzak). 5. Oriental Suite from "A Thousand and One Nights" (Ralf). 6. Songe d'Amour après le Bal (Czibulka). 7. Slavonic Dances (Dvorak). 8. Dutch and Flemish Songs: (a) The Stork (Hullebroeck), (b) The Bugaboo (Hullebroeck), (c) Ring King (Opsoner), (d) Karlijntje (Hullebroeck), (e) Oh, Oh, This Love (Mestdagh). 9. Orchestral Selections: (a) Gavotte Caprice (Bortkiewicz), and "Serenade in May" (Siede). In the Interval at 6.55 p.m.: Talk.

8.25 p.m.—Police News.

8.50 p.m.—Programme arranged by the Society for Religious Transmissions. In the Interval at 11.10 p.m.: News and Weather.

11.20 p.m. (approx.)—Close Down.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb W.L.: 310 m. (275.2 m.); 0.85 kw.

5.0 p.m.—Gramophone Records.

5.30 p.m.—Children's Corner.

6.30 p.m.—Talk for Scouts.

6.45 p.m.—French Lesson.

8.30 p.m.—Concert of Light Music.

9.45 p.m.—Orchestral Concert.

10.30 p.m.—News.

NORWAY

OSLO. Kringkastingsselskapet. W.L. 461.5 m.; 1.5 kw.

6.0 p.m.—Talk for Boys.

7.15 p.m.—News.

7.30 p.m.—Elementary German Lesson.

8.0 p.m.—Time.

8.2 p.m.—Concert. 1. La Belle Hélène—Overture (Offenbach). 2. Ganz allerliebst (Waldteufel). 3. The Dollar Princess—Selection (Fall). 4. The Snowman—Overture and Serenade (Korngold). 5. L'Arlesienne—Suite (Bizet).

9.0 p.m.—Talk on "Rome."

9.30 p.m.—Recital of Italian Folk Songs.

10.0 p.m.—News and Weather.

10.15 p.m. (approx.)—Close Down.

POLAND

WARSAW. Polskie Radio. W.L.: 1,111 m.; 10 kw.

Transmits at intervals from 3.0 p.m. to 6.40 p.m.—Variety Items.

7.0 p.m.—"Letter-Box."

7.30 p.m.—Talk. "What every Pole Should Know."

7.55 p.m.—Agricultural Report.

8.30 p.m.—Concert of Operetta Music.

10.0 p.m.—Time and News.

10.30 p.m.—Dance Music, relayed from the Hotel Bristol.

SPAIN

BARCELONA. Radio Barcelona (EAJ1). W.L.: 344.8 m.; 1.5 kw.

12.0 (noon)—Chimes and Weather.

6.0 p.m.—Exchange Quotations.

6.10 p.m.—Quintet Selections.

6.30 p.m.—Esperanto Talk.

9.40 p.m.—Talk: "The Approach of the Comet Pons Winnecke to the Earth."

10.0 p.m.—Chimes and Weather.

10.10 p.m.—Concert by the "Orfeon Sarraneng"—relayed by Madrid (EAJ7), on 375 m.

11.0 p.m.—Simultaneous Broadcast with Madrid (EAJ7).

11.40 p.m.—Quintet Selections.

12.0 (midnight) (approx.)—Close Down.

CADIZ. Union Radio (EAJ3). W.L.: 362 m. (297 m.); 0.55 kw.

7.5 p.m.—Concert of Vocal and Instrumental Music. 1. "El Puno de Rosas"—March (Chapl). 2. Selection from "Windmills"—Musical Play (Luna). 3. Selection from "Maria Sol" (Guerrero).

7.55 p.m.—News.

8.0 p.m.—Time.

8.5 p.m.—French Lesson.

8.20 p.m.—Pianoforte Recital from the Works of Mendelssohn.

8.45 p.m.—Dance Music.

9.0 p.m. (approx.)—Close Down.

12 (midnight)—Experimental Transmission.

MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.

11.45 a.m.—Time, Weather, Astronomy and Commerce Notes, Exchange Quotations and News.

2.0 p.m.—Concert by the "Arty's" Orchestra. In the Interval: Theatre Notes, Weather and News.

6.30 p.m.—Esperanto Lesson.

7.0 p.m.—Concert.

9.30 p.m.—History Lesson.

10.0 p.m.—Time and Exchange Quotations.

10.10 p.m.—Programme relayed from Barcelona, EAJ1 (343.8 m.).

SWITZERLAND

BERN. Radio-Bern. W.L.: 411 m.; 6 kw.

Transmits at intervals from 1.0 p.m. to 7.30 p.m.—Time and Weather.

7.35 p.m.—Talk.

8.0 p.m.—Talk.

8.15 p.m.—Vocal and Orchestral Concert.

9.50 p.m.—News and Weather.

10.5 p.m. (approx.)—Close Down.

GENEVA. Radio-Geneva. W.L.: 780 m.; 1.5 kw.

8.15 p.m.—Exchange, Time and Weather.

8.20 p.m.—Culinary Talk.

8.40 p.m.—Programme relayed from Basle (1,100 m.) and Bern (411 m.)

9.20 p.m.—News.

LAUSANNE. Société Romande de Radiophonie (HB2). W.L.: 850 m.; 1.5 kw.

7.15 p.m.—Weather.

8.1 p.m.—Chimes and Weather.

8.2 p.m.—Talk on "Floral Decoration."

8.10 p.m.—Programme relayed from Bern (411 m.).

9.50 p.m.—News.

ZURICH. Radio Genossenschaft. W.L.: 496 m.; 1 kw.

Transmits at intervals from 12.30 p.m. to 7.30 p.m.—Talk.

7.57 p.m.—Time and Weather.

8.0 p.m.—Concert of Italian Music.

9.0 p.m.—French Operetta Music.

9.50 p.m.—News and Weather.

10.0 p.m. (approx.)—Close Down.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 309.1 m. and 64 m.; 25 kw.

Transmits at intervals from 3.0 p.m. to 12.30 a.m. (Thursday, April 28th).—Agricultural Report.

12.45 a.m.—Talk relayed from Pittsburgh University.

1.0 a.m.—"Iodents," relayed from New York.

1.30 a.m.—Concert relayed from New York.

2.0 a.m.—"The Maxwell Hour of Music."

3.0 a.m.—R.C.A. "Radiotrons," relayed from New York, followed by Time and Weather.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.

Transmits at intervals from 4.30 p.m. to 11.25 p.m.—Baseball Results.

11.30 p.m.—"South Sea Islanders," relayed from New York.

12.0 (midnight)—Selections by the Remington Band.

1.0 a.m.—"Troubadours," relayed from New York.

1.30 a.m.—Musical Selections, relayed from New York.

2.0 a.m.—Selections of Light Opera Music from New York.

PROGRAMMES FOR THURSDAY

(April 28)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2RN). W.L.: 319.1 m.; 1.5 kw.

1.30 p.m.—Stock Exchange List News, Weather and Gramophone Records.

6.30 p.m.—Children's Corner.

7.0 p.m.—Gramophone Records.

7.15 p.m.—Stock Exchange List, News and Market Report.

7.30 p.m.—Talk, "The Evolution of the Irish Nation," by Seamus Mac Cathmhaoil.

7.45 p.m.—French Lesson by Mile. Giudicelli.

8.0 p.m.—"Gems from South America" (Schmidt), by the Station Orchestra.

8.25 p.m.—Songs by Rosalind Cohen (Mezzo-Soprano).

8.45 p.m.—Schumann Music by the Station Orchestra.

9.0 p.m.—Talk, "Ireland's Place in the Athletic World—Carberry."

9.15 p.m.—Dance Music by Gratton Kelly's Dance Band.

10.30 p.m.—Weather.

10.40 p.m. (approx.)—Close Down

AUSTRIA

VIENNA. Radio-Wien. W.L.: 577 and 517.2 m.; 1.5 and 5 kw. Transmits at intervals from 11.0 a.m.

6.0 p.m.—Talk on "Austrian Sanatoriums."

6.30 p.m.—Talk.

7.0 p.m.—Medical Talk on "The Infectious Diseases of Children."

7.30 p.m.—Advanced English Lesson.

8.5 p.m.—Symphony Concert. 1. II Seraglio—Overture (Mozart). 2. Symphony in E flat major (Haydn). 3. Styrian Dance (Lanner). 4. Serenade (Grünfeld). 5. Selections (Joh. Strauss).

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5 m.; 1.5 kw. Transmits at intervals from 5.0 p.m.

7.30 p.m.—Radio-Chronique.

8.0 p.m.—Chamber Music.

8.30 p.m.—Topical Talk.

8.55 p.m.—Programme dedicated to the Works of Marivaux, with musical interludes.

10.0 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw. Programme relayed by Soro (1153 m.)

7.0 p.m.—News, Exchange and Time.

7.20 p.m.—Talk.

7.50 p.m.—Talk: "Wolfgang Amadeus Mozart."

8.30 p.m.—Concert of Chamber Music: 1. String Quartet in A Major (Mozart) 2. String Quartet in B Flat Major, Op. 49 (Haydn).

9.30 p.m.—Selections from Novels by Danish Women-writers.

10.0 p.m.—News.

10.15 p.m.—Relay of Foreign Stations.

12.0 (Midnight)—Chimes from the Town Hall.

12.5 a.m. (approx.)—Close Down.

FRANCE

PARIS. Ecole Supérieure (FPT). W.L.: 464 m.; 0.5 kw. Transmits at intervals from 8.0 a.m.

8.0 p.m.—Esperanto Lesson.

8.15 p.m.—Review of Periodicals.

8.30 p.m.—Theatre Talk.

9.0 p.m.—Concert, followed by News.

PARIS. Eiffel Tower (FL). W.L.: 2,650 m.; 5 kw.

10.26 a.m.—Time Signal.

6.45 p.m.—"Le Journal Parlé."

8.0 p.m.—Weather.

8.15 p.m.—Concert.

9.15 p.m.—Educational Programme.

11.26 p.m.—Time Signal.

PARIS. Petit Parisien. W.L.: 340.9 m.; 0.5 kw.

9.0 p.m.—Concert. 1. Athalie—Overture (Mendelssohn). 2. Minuet (Haydn). 3. Adagio from the Sixth Quintet (Mozart). 4. Second Movement from the Third Symphony (Schumann). 5. Iphigenia in Aulis (Gluck). 6. Minuet from "Le Bourgeois Gentilhomme" (Lully). 7. Parsifal—Selection (Wagner).

PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.

10.30 a.m.—News, Exchange Quotations and Musical Selections.

12.30 p.m.—Concert: 1. Dans le pays du rêve (Lemaire). 2. Carossante (Porret). 3. (a) Rondino (Beethoven); (b) Gitina (Kreiser). 4. Minuet (Schubert-Salabert). 5. Jalousie (Marinkovitch). 6. Deuxième Arabesque (Debussy). 7. Nocturne (Dourmay). 8. Sous Bois (Staub). 9. The Damnation of Faust—Trio (Berlioz). 10. Si vous l'aviez compris (Denza). 11. Impressions d'Italie (Charpentier). 12. Humoresque (Tschaiikovsky). 13. Expansion (Pierne). 14. Monsieur Beaucaire (Messager-Salabert). 14. Nuit Napolitaine (Marti).

1.50 p.m.—News.

4.30 p.m.—Exchange Quotations.

4.45 p.m.—Children's Corner.

5.35 p.m.—Market Prices.

7.30 p.m.—Colonial News and Topical Talk.

8.0 p.m.—Exchange Quotations and News.

8.15 p.m.—Talk in Esperanto.

8.30 p.m.—Book-keeping Lesson.

8.45 p.m.—Concert arranged by "Le Journal"—"Das Rheingold"—Opera (Wagner). In the Intervals, News.

TOULOUSE. Radiophonie du Midi W.L.: 389.6 m.; 2 kw.

5.0 p.m.—Exchange Quotations and News.

5.35 p.m.—Agricultural Report.

8.0 p.m.—Time, Exchange Quotations and News.

8.45 p.m.—Concert arranged by "La Compagnie des Lampes," "Si j'étais Roi"—Opera-comique in Four Acts (Adam).

GERMANY

BERLIN. Koenigswusterhausen. W.L.: 1,250 m.; 8 kw. Transmits at intervals from 2.30 p.m.

5.0 p.m.—Talk. "German Settlements in Brazil."

5.30 p.m.—Talk. "Japan."

6.0 p.m.—Talk. "The Relation of Bee-Keeping to Agriculture."

6.30 p.m.—Advanced Spanish Lesson.

6.55 p.m.—Programme in Commemoration of Friedrich von Sessenheim.

8.30 p.m.—Programme relayed from Voxhaus.

BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw. Transmits at intervals from 10.10 a.m.

5.0 p.m.—Orchestral Concert.

6.0 p.m.—Household Hints, Theatre and Film Notes.

7.0 p.m.—Spanish Lesson.

7.30 p.m.—Talk. "Epic Literature."

7.55 p.m.—Talk. "What is Political Economy?"

8.30 p.m.—Reading of Poems.

9.25 p.m.—Concert.

10.15 p.m. (approx.)—Weather and News.

10.30 p.m.—Dance Music.

12.30 a.m. (approx.)—Close Down.

BRESLAU. Schlesische Funkstunde W.L.: 315.8 m.; 4 kw.

4.30 p.m.—Concert of Northern Music: 1. Wedding Day on Troldhaugen (Grieg). 2. Suite from "Peer Gynt" (Grieg). 3. Sonata in G Major (Grieg). 4. Finnish Folk Song (Kuula). 5. Elégie (Melartin). 6. Norwegian Bridal March (Grieg). 7. (a) I Love You; (b) Erotik; and (c) Second Peer Gynt—Suite (Grieg).

6.0 p.m.—Reading: "Anna Alexandrovna."

6.50 p.m.—Medical Talk.

7.25 p.m.—Talk: "The Importance of the German Beet Sugar Industry."

8.5 p.m.—Reading from the Works of Goethe.

9.0 p.m.—"Bastien and Bastienne"—Opera Comique in One Act (Mozart).

10.30 p.m.—Dance Music.

12.0 (Midnight) (approx.)—Close Down.

FRANKFURT-am-MAIN. Südwestdeutscher Rundfunk. W.L.: 428.6 m.; 4 kw. Transmits at intervals from 6.45 a.m.

5.45 p.m.—Reading from Burckhardt's "Renaissance."

6.15 p.m.—Wireless Talk.

6.45 p.m.—Talk on "The Works of Heinrich Lersch."

7.45 p.m.—Broadcast arranged by the Frankfurter Zeitung.

8.15 p.m.—"The Importance of Being Ernest"—Comedy (Oscar Wilde), followed by Dance Music.

12.30 a.m. (approx.) (April 29th)—Close Down.

HAMBURG. Norag (ha, in Morse). W.L.: 394.7 m.; 4 kw.

Transmits at Intervals from 5.45 a.m.

6.50 p.m.—Talk: "The Asbestos Industry of the Norag district."

7.10 p.m.—Talk: "Art Training."

7.35 p.m.—Talk for Tourists.

7.55 p.m.—Weather.

8.0 p.m.—"Snider Norig"—Dialect Farce (Paul Schurig).

10.30 p.m. (approx.)—Relay of Foreign Stations. Weather and News.

11.50 p.m.—Ice Report.

12.0 (midnight) (approx.)—Close Down.

KOENIGSBERG. Ostmarken Rundfunk. W.L.: 329.7 m.; 4 kw. Transmits at intervals from 10.15 a.m.

6.5 p.m.—Agricultural Notes.

6.15 p.m.—Talk. "James Watt."

7.0 p.m.—Talk on "The Missa Solemnis," with Illustrations.

7.40 p.m.—Talk. "Music."

7.55 p.m.—Modern Hungarian Chamber Music, Weather and News.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 468.8 m.; 25 kw. Programme also relayed by Muenster on 241.9 m.

Transmits at intervals from 1.5 p.m.

6.35 p.m.—Talk. "Westphalian Art in the Middle Ages," from Muenster.

7.15 p.m.—Talk on "Bee Keeping," from Muenster.

7.40 p.m.—Talk. "Good German," from Cologne.

8.0 p.m.—Morse Lesson, from Dortmund (283 m.).

8.15 p.m.—Concert from Muenster.

8.45 p.m.—Introductory Talk to the following Broadcast, from Cologne.

9.0 p.m.—"Gyges and sein Ring," Tragedy in Five Acts (Hebbel), from Cologne.

10.45 p.m.—Press and Sports News.

11.0 p.m.—Concert from the Café Kaiserhof, Muenster.

12.0 (midnight, approx.)—Close Down.

LEIPZIG. Mitteldeutscher Rundfunk. W.L.: 365.8 m.; 4 kw. Transmits at intervals from 10.0 a.m.

6.30 p.m.—Advanced Spanish Lesson, relayed from Koenigswusterhausen, 1,250 m.

7.0 p.m.—Talk.

7.30 p.m.—Talk. "Folk Lore as a Science."

8.15 p.m.—Concert of Folk Music.

10.0 p.m.—Variety Items followed by Press and Sports News.

10.30 p.m. (approx.)—Silent Night.

MUNICH. Deutsche Stunde in Bayern. W.L.: 535.7 m.; 1.5 kw. Transmits at intervals from 11.45 a.m.

12.30 p.m.—Concert of Operetta Music. 1. "Das Dreimäderlhaus"—Potpourri (Schubert). 2. "Grüß mir mein Wien" from "Grüß Mariza" (Kalan). 3. "Die Fledermaus"—Potpourri (Strauss). 4. "Paganini"—Potpourri (Léhar).

1.55 p.m.—Time, Weather and News.

4.0 p.m.—Talk, "The Thirty Years War."

4.30 p.m.—Concert. 1. Two Songs from "The Marriage of Figaro" (Mozart). 2. Two Songs from "La Tosca" (Puccini). 3. Clarinet Concerto in F minor (Weber). 4. "Tiefand"—Selection (d'Albert). 5. Songs from "Cavalleria Rusticana" (Mascagni). 6. "Der Evangelmann"—Selection (Kienzl).

5.30 p.m.—Talk for Tourists.

6.15 p.m.—Time, Weather and News.

6.45 p.m.—Talk, "Molière."

7.15 p.m.—Orchestral Concert.

8.15 p.m.—"Old Heidelberg"—Play (Meyer-Förster).

10.0 p.m.—Time, Weather and News.

10.20 p.m.—Concert.

STUTTART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw.

11.40 a.m.—Weather and News.

1.10 p.m.—News and Gramophone Selections.

3.50 p.m.—Culinary Talk.

4.15 p.m.—Concert. 1. Aus Stahl und Eisen (Rathke). 2. "Der Rosenkavalier" (Strauss). 3. Le Canarie (Poliakin). 4. "Dimitri Donskoi"—Overture (Rubinstein). 5. Rubinstein—Fantasia (Urbaeh). 6. Polonaise (Mozzkovsky). 7. (a) Légende, (b) Mélodie, (c) Nocturne (Paderewsky). 8. Des Nigers Traum (Myddleton).

6.0 p.m.—Time, Weather and Agricultural Notes.

6.15 p.m.—Dramatic Selection.

6.45 a.m.—Talk. "Headaches."

7.15 p.m.—Talk. "The Bremen Dead." Relayed from Karlsruhe.

7.45 p.m.—Time, Weather and News.

8.0 p.m.—Chamber Music. Relayed from Karlsruhe. 1. Adagio (Beriot). 2. From the B flat major Pianoforte Trio (Schubert). 3. Rondino (Brauer). 4. From the B major Pianoforte Trio (Brahms). 5. (a) Träumerei (Schumann), (b) Jagd-fantasie (Novacek).

9.0 p.m.—Concert of Italian Opera. Relayed from Freiburg (577 m.).

11.0 p.m.—News.

11.15 p.m. (approx.)—Close Down.

HOLLAND

HILVERSUM. Hilversumsche Draadloze Omroep (HDO). W.L.: 1,060 m.; 5 kw.

12.40 p.m.—Police News.

4.10 p.m.—Programme for Orphanages and Hospitals.

1.15 p.m.—Musical Programme by the "Trianon Trio."

6.50 p.m.—Concert by the Station Orchestra. 1. "La Macon"—Overture (Auber). 2. Nocturne from "A Midsummer Night's Dream" (Mendelssohn). 3. Chapi's Moorish Serenade (Reynoso). 4. Aria from "The Magic Flute" (Mozart). 5. Alleluiah (Mozart). 6. Selection from "Madame Butterfly" (Puccini). 7. Cortège Carnavalesque (Razigade). 8. L'Adieu Suprême (Pierne). 9. Three Songs (Pierne). 10. Dream Waltz (Müllöcker). 11. Prelude and "Clair de Lune" (Massenet). 12. Serenade to the Sevillanita (Magliani).

8.25 p.m.—Police News.

8.50 p.m.—Symphony Concert. Relayed from the Amsterdam Concert Hall.

11.10 p.m.—Weather Forecast and News Bulletin.

11.20 p.m.—A Short One Act Comedy.

11.55 p.m. (approx.)—Close Down.

HUNGARY

BUDAPEST. Magyar Radio Ujsag. W.L.: 555.5 m.; 3 kw.

5.0 p.m.—Weather, followed by Concert of Chamber Music.

6.20 p.m.—Programme of the "Magyar Radio Ujsag."

5.0 p.m.—Programme relayed from the Royal Hungarian Opera House.

10.20 p.m.—Relay of Foreign Stations.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb. W.L.: 310 m. (275.2 m.); 0.35 kw.

5.0 p.m.—Pianoforte Recital.

6.30 p.m.—Russian Lesson.

8.30 p.m.—Vocal Recital.

9.45 p.m.—News.

NORWAY

OSLO. Kringkastingselskapet. W.L.: 461.5 m.; 1.5 kw.

6.0 p.m.—Divine Service.

6.25 p.m.—Shorthand Lesson.

6.45 p.m.—Elementary French Lesson.

7.15 p.m.—News.

7.30 p.m.—Elementary English Lesson.

8.0 p.m.—Time.

8.2 p.m.—Relay of Opera from the Royal Opera House, Stockholm, or Talk on "Spain," followed by Violin Recital, by Oscar Gustavson.

10.0 p.m.—News and Weather.

10.15 p.m. (approx.)—Close Down.

POLAND

WARSAW. Polskie Radio. W.L.: 1,111 m.; 10 kw.

Transmits at intervals from 3.0 p.m.

4.0 p.m.—Talk on "Polish Literature."

5.0 p.m.—Talk on "The Sanitary System in American Towns."

5.30 p.m.—Review of New Books.

6.0 p.m.—Dance Music relayed from the "Café Gastronomja."

6.40 p.m.—Variety Items.

7.0 p.m.—Elementary English Lesson.

7.30 p.m.—Talk, "The Organisation of Work in Agriculture."

7.55 p.m.—Agricultural Report.

8.15 p.m.—Concert relayed from Cracow, 422 m.

8.30 p.m.—Time and News.

SPAIN

BARCELONA. Radio Barcelona (EAJ1). W.L.: 344.8; 1.5 kw.

12.0 (noon)—Chimes and Weather

6.0 p.m.—Exchange Quotations, 6.10 p.m.—Fashion Review.

6.40 p.m.—Selections by the Station Quintet.

8.30 p.m.—Opening Signal.

8.40 p.m.—English Lesson.

9.0 p.m.—Exchange Quotations.

9.10 p.m.—Quintet Selections.

9.40 p.m.—Selection from "El abolengo" (Rivas).

10.20 p.m.—Song Recital by "La Goyita."

11.0 p.m.—Concert by the "Toldrá Quintet," relayed from "La Granja Royal."

12.0 (midnight) (approx.)—Close Down.

CADIZ. Union Radio (EAJ3). W.L.: 362 (297) m.; 0.55 kw.

7.5 p.m.—Concert.

8.0 p.m.—Time and News.

8.10 p.m.—Concert by the Station Orchestra.

9.0 p.m. (approx.)—Close Down.

12.0 (midnight) (approx.)—Experimental Transmission.

MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.

11.45 a.m.—Time, Astronomy and Commerce Notes, Exchange Quotations and News.

2.0 p.m.—Concert by the "Artys" Orchestra. In the Intervals: Theatre Notes, Weather and News.

6.30 p.m.—Children's Corner.

7.30 p.m.—Concert.

9.30 p.m.—French Lesson.

10.0 p.m.—Time and Exchange Quotations.

10.10 p.m.—Concert by a Military Band.

12.20 a.m. (Friday, 26th April)—News.

12.30 a.m. (approx.)—Close Down.

SWITZERLAND

BERN. Radio-Bern. W.L.: 411 m.; 6 kw.

Transmits at intervals from 1.0 p.m.

7.30 p.m.—Time and Weather.

7.35 p.m.—Agricultural Talk.

8.0 p.m.—Technical Talk.

10.15 p.m.—News and Weather.

10.30 p.m. (approx.)—Close Down.

GENEVA. Radio-Geneva. W.L.: 760 m.; 1.5 kw.

8.15 p.m.—Exchange, Time and Weather.

8.20 p.m.—Children's Corner.

8.35 p.m.—Inaugural Programme of the International Music Exhibition, relayed from the Victoria Hall, Geneva. Programme from the Works of Beethoven, Berlioz, d'Indy, Dukas, Debussy and Ravel.

LAUSANNE. Société Romande de Radiophonie (HB2). W.L.: 850 m.; 1.5 kw.

8.20 p.m.—Weather.

8.30 p.m.—Concert by the Orchestra of the Paris Conservatoire, from the Victoria Hall.

ZURICH. Radio Genossenschaft. W.L.: 496 m.; 1 kw.

Transmits at intervals from 12.80 p.m.

7.57 p.m.—Time and Weather.

8.30 p.m.—"Dauthendy" Recital.

8.50 p.m.—Concert of German Opera Music.

9.50 p.m.—News and Weather.

10.0 p.m. (approx.)—Close Down.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 308.1 m. and 64; 25 kw.

Transmits at intervals from 3.0 p.m.

12.30 a.m. (Friday, April 29th)—Agricultural Report.

1.0 a.m.—Concert relayed from New York.

2.0 a.m.—"Our Musical United States," relayed from New York, followed by Time and Weather.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.

Transmits at intervals from 4.30 p.m.

11.25 p.m.—Baseball Results.

11.30 p.m.—"The Story of America."

11.45 p.m.—Studio Programme.

1.0 a.m. (Friday, April 29th)—"Eskimos," relayed from New York.

2.0 a.m.—Studio Programme.

3.0 p.m.—Dance Music, relayed from New York.

3.30 p.m.—Organ Recital.

PROGRAMMES FOR FRIDAY

(April 29)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2RN). W.L.: 319.1 m.; 1.5 kw.

1.30 p.m.—Stock Exchange List, News and Weather, followed by Gramophone Records.

6.30 p.m.—Children's Corner.

7.0 p.m.—Gramophone Concert.

7.25 p.m.—Stock Exchange List and News.

7.30 p.m.—Talk, "Easter Customs," by Patricia Hoey.

7.45 p.m.—Recitations by Freda Fay.

8.0 p.m.—Talk on "Richard Strauss"—With Musical Illustrations, by W. Starkie, LL.D.

8.45 p.m.—Orchestral Music. 1. American Festival Overture (Hegner). 2. Three Cuban Dances (Corvantes). 3. "College Life"—Selections of Comic Opera (Herbert).

9.15 p.m.—"Noblesse Oblige"—Short Sketch by Hope Campbell and Margaret Sinton.

9.30 p.m.—Pianoforte Solos, by Irene Lister.

9.45 p.m.—Selections from "La Traviata" (Verdi), by the Station Orchestra and Chorus.

10.30 p.m.—Weather.

10.40 p.m. (approx.)—Close Down.

AUSTRIA

VIENNA. Radio-Wien. W.L.: 577 and 517.2 m.; 1.5 and 5 kw. Transmits at intervals from 11.0 a.m.

6.0 p.m.—Talk on "Festival Week in Vienna and Southern Austria."

6.10 p.m.—Music Talk.

7.0 p.m.—Advanced French Lesson.

7.30 p.m.—Elementary English Lesson.

8.5 p.m.—"Die Frau von Vierzig Jahren"—Comedy (Sill-Vara).

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5 m.; 1.5 kw. Transmits at intervals from 5.0 p.m.

7.30 p.m.—"Radio-Chronique."

8.0 p.m.—Concert.

8.30 p.m.—Stenography Lesson.

8.45 p.m.—Concert (cont.).

9.0 p.m.—Topical Talk.

9.15 p.m.—Concert.

10.0 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw. Programme relayed by Soro (1,153 m.)

3.0 p.m.—Concert.

3.50 p.m.—Talk, "Floral House Decorations."

4.15 p.m.—Concert (continued).

5.30 p.m.—Children's Corner.

6.0 p.m.—Chimes from the Town Hall.

7.0 p.m.—News, Exchange and Time.

7.20 p.m.—Talk.

7.50 p.m.—Introductory Talk on following broadcast.

8.0 p.m.—"Rigolietto"—Opera (Verdi). News.

FRANCE

PARIS. Ecole Supérieure (FPTT). W.L.: 464 m.; 0.5 kw. Transmits at intervals from 8.0 a.m.

8.0 p.m.—Spanish Lesson arranged by the Berlitz School.

8.30 p.m.—Sports Talk.

8.45 p.m.—Talk, "The Father's Power."

9.0 p.m.—Concert. Selections from "Tosca" (Puccini), followed by news.

PARIS. Eiffel Tower (FL). W.L.: 2,650 m.; 5 kw.

10.26 a.m.—Time Signal.

6.45 p.m.—"Le Journal Parlé."

8.0 p.m.—Weather.

8.15 p.m.—Concert.

9.15 p.m.—Educational Programme.

11.26 p.m.—Time Signal.

PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.

10.30 a.m.—News, Exchange Quotations and Musical Selections.

12.30 p.m.—Concert. 1. Bifolco (Volpatti). 2. All Alone. 3. Andante from the Second Sonata (Mozart). 4. Mélodie (Lederer). 5. Chant Hindou (Bemberg). 6. Adagio and Allegro (Lulli). 7. Sonata (Tugnani). 8. Berceuse (Dupuis). 9. (a) Les Chansons de Miarka (Georges); (b) L'eau qui court (Georges). 10. Rondo

(Boccherini). 11. Gavotte Tendre (Gluck). 12. Sonata pour trio (Loeillet). 13. Menuet de Printemps (Hauchard). 14. Menuet Fleuri (Ganne).

1.50 p.m.—News.

4.30 p.m.—Exchange Quotations.

4.45 p.m.—Concert arranged by "L'Association des Radio-Amateurs Français." 1. Literary Notes. 2. Talk. 3. Rhapsody (Liszt). 4. Du Gris (Benech). 5. Dramatic Selections. 6. Le Tango de la Danseuse (Benech). 7. Chanson Louis XIII et pavane (Couperin).

5.35 p.m.—Market Prices.

7.40 p.m.—Topical Talk.

8.0 p.m.—Exchange Quotations and News.

8.30 p.m.—Concert. 1. Trio Rose (Mendelssohn). 2. Intérieur (Maeterlinck). 3. Magnificat (Faure). 4. Unfinished Symphony (Schubert) In the intervals, News.

TOULOUSE. Radiophonie du Midi. W.L.: 389.6 m.; 2 kw.

5.0 p.m.—Exchange Quotations and News.

5.35 p.m.—Agricultural Report.

8.0 p.m.—Time, Exchange Quotations and News.

8.45 p.m.—Concert arranged by "La Compagnie des Lampes." 1. "Fingal's Cave"—Overture (Mendelssohn). 2. First Symphony (Beethoven). 3. Sevillana (Kunc). 4. Laghetto from the Quintet (Mozart). 5. Impressions d'Italie (Charpentier). 6. Religious Dance of the Slaves (Kunc). 7. Caprice Italien (Tchaikovsky).

GERMANY

BERLIN. Koenigswusterhausen. W.L.: 1,250 m.; 8 kw. Transmits at intervals from 12.0 (noon).

5.0 p.m.—Talk on "Architecture."

6.0 p.m.—Talk on "Modern Training in Workshop and School."

6.30 p.m.—Advanced English Lesson.

6.55 p.m.—Talk on "The World Trade Conferences."

7.20 p.m.—Medical Talk.

7.45 p.m.—Shorthand Competition.

8.0 p.m.—Programme relayed from Berlin.

BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw. Transmits at intervals from 10.10 a.m.

6.0 p.m.—Household Hints, Theatre and Film Notes.

6.20 p.m.—Gardening Talk.

6.50 p.m.—"The Modern Press."

7.15 p.m.—Legal Talk.

8.10 p.m.—"Li-Tai-Pe"—Opera (Frankenstein).

10.15 p.m.—Weather and News.

10.30 p.m.—Dance Music.

12.30 p.m. (approx.)—Close Down.

BRESLAU. Schlesische Funkstunde. W.L.: 315.8 m.; 4 kw.

4.30 p.m.—Concert 1. "A Carnival in Rome"—Overture (Berling). 2. Selection from "Jenufa"—Opera (Janacek). 3. Prelude—Symphonic Poem (Liszt). 4. Spanish Dances (Moszkovsky). 5. Overture—Solenelle (Tchaikovsky).

6.0 p.m.—Talk on "Cooking Recipes"

6.50 p.m.—Legal Talk.

7.20 p.m.—Taxation Talk.

7.45 p.m.—Programme from Koenigswusterhausen (1,250 m.).

8.10 p.m.—Concert of Light Music. 1. Unterm Stennebanner (Souza). 2. Lommel (Lommel). 3. Overture to "Das Schonste Mädchen im Stadtehen"—Opera Comique (Conradi). 4. Songs. 5. Gey-Boston (Benatsky). 6. Songs. 7. "Pauline Neugebauer in the Swimming Bath" (Lommel). 8. Durch's Licht (Translateur).

FRANKFURT-am-MAIN. Südwestdeutscher Rundfunk. W.L.: 428.6 m.; 4 kw. Transmits at intervals from 6.45 a.m.

5.45 p.m.—Reading from Goethe's "Letters to a Child."

6.15 p.m.—Talk, "Budapest and Copenhagen."

6.45 p.m.—Italian Lesson.

7.15 p.m.—Talk.

7.45 p.m.—Shorthand Competition, relayed from Koenigswusterhausen (1,250 m.).

8.0 p.m.—Film Notes.

8.10 p.m.—Wireless Talk.

8.20 p.m.—Variety Concert and Dance Music relayed from Cassel (272.7 m.).

HAMBURG. Norag (ha. in Morse). W.L.: 394.7 m.; 4 kw. Transmits at intervals from 5.45 a.m.

6.50 p.m.—Talk, "The History of the German Theatre."

7.10 p.m.—Talk, "Women in Science and Art."

7.35 p.m.—English Lesson.

7.45 p.m.—Shorthand Competition.

7.55 p.m.—Weather.

8.0 p.m.—Symphony Concert, from the Hamburg Music Hall.

10.30 p.m. (approx.)—Concert from Söllner's Gute Stube, Bremen. Weather and News.

11.50 p.m.—Ice Report.

12.0 (midnight, approx.)—Close Down.

KOENIGSBERG. Ostmarken Rundfunk. W.L.: 329.7 m.; 4 kw. Transmits at intervals from 10.15 a.m.

6.5 p.m.—Agricultural Notes.

6.30 p.m.—Talk, "Agriculture."

6.45 p.m.—Talk, "Schopenhauer."

7.15 p.m.—Talk, "The Life of a Policeman."

7.45 p.m.—Shorthand Competition.

7.55 p.m.—Weather.

8.0 p.m.—Elementary English Lesson.

8.40 p.m.—Concert of Opera Music, relayed from Danzig (272.7 m.). In the interval: Weather and News.

10.30 p.m. (approx.)—Chess Lesson.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 468.8 m.; 25 kw. Programme also relayed by Muenster on 241.9 m.

Transmits at intervals from 1.5 p.m.

6.5 p.m.—Travel Talk from Muenster.

6.35 p.m.—Talk, "A Hindu Carnival," from Dortmund, 283 m.

7.0 p.m.—Shorthand Lesson from Koenigswusterhausen, 1,250 m.

7.10 p.m.—Agricultural Notes and Weather, from Cologne.

7.30 p.m.—English Lesson from Cologne.

7.50 p.m.—Talk on "Masaryk" from Cologne.

8.10 p.m.—Talk, "Carnival Time in Seville," from Dortmund.

8.30 p.m.—Vocal Concert by the "Rhine Land Choir."

10.40 p.m.—Press and Sports News, from Cologne.

10.45 p.m.—Dance Music from Cologne.

12.0 (midnight)—Close Down.

LEIPZIG. Mitteldeutscher Rundfunk. W.L.: 365.8 m.; 4 kw. Transmits at intervals from 10.0 a.m.

6.30 p.m.—Advanced English Lesson relayed from Koenigswusterhausen, 1,250 m.

7.0 p.m.—Talk on "Life in the Country."

7.45 p.m.—Shorthand Competition relayed from Koenigswusterhausen.

8.0 p.m.—Weather and Time.

8.15 p.m.—Military Concert. 1. March (Promper). 2. "Norma"—Overture (Bellini). 3. Selections from "Lohengrin" (Wagner). 4. Wandervogel Lieder (Meister). 5. Selection from "Hansel and Gretel" (Humperdinck). 6. March of the Praetors (Nowowski). 7. "Zirkus Renz"—Xylophone Solo (Peters). 8. "Roses of the South"—Waltz (Strauss). 9. Army March No. 7.

10.0 p.m.—Press and Sports News.

10.15 p.m.—Dance Music.

12.0 (midnight)—Close Down.

STUTTGART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw. 1.10 p.m.—News and Gramophone Selections.

3.50 p.m.—Talk: "Woman's Realm."

4.15 p.m.—Concert: 1. Regiments-kamaraden (Rathke). 2. Rosen aus dem Süden (Strauss). 3. Duell for Violin and Viola (Bruni). 4. "Manfred"—Overture (Schumann). 5. Ein Rosentau auf Schumann's Grab (Urbach). 6. Two Slavonic Dances (Dvorak). 7. Berceuse Slavic (Neruda). 8. Slavonic March (Oscheit).

6.0 p.m.—Time, Weather and Agricultural Notes.

6.45 p.m.—Reading from a novel.

7.15 p.m.—Talk: "Dorothea Schlozer."

7.45 p.m.—Shorthand Competition.

7.55 p.m.—Time and Weather.

8.0 p.m.—Symphony Concert: 1. "The Hebrides"—Overture (Mendelssohn). 2. Symphony No. 4 (Mendelssohn).

8.30 p.m. (approx.)—"Request Programme"—News.

HOLLAND

HILVERSUM. Hilversumche Draadloze Omroep (HDO). W.L.: 1,060 m.; 5 kw.

12.40 p.m.—Police News.

1.15 p.m.—Music by the "Trianon" Trio.

5.10 p.m.—Concert by the Station Orchestra. 1. "Semiramide"—Overture (Rossini). 2. Selection from "The Drum Major's Daughter" (Offenbach). 3. Intermezzo (Fresco). 4. Espana (Waldteufel). 5. Prose Reading. 6. Orchestral Selections—"Bella Vista" (Morena). 7. Extase (Ganne). 8. Czardas (Gungl). 9. Un soir de fête à la Havana (Filipucci). 10. Ben Akiba (Siede).

7.25 p.m.—English Lesson.

8.25 p.m.—Police News.

8.50 p.m.—News.

9.15 p.m.—Concert by the Station Orchestra. 1. "Phèdre"—Overture (Massenet). 2. Suite "Roma" (Bizet). 3. Sonata in D major (Handel). 4. Jota and Arragonese (Saint-Saëns). 5. Selection from "Manon Lescaut" (Puccini). 6. Neu Wien—Waltz (Strauss). 7. Andante from the Spanish Symphony (Lalo). 8. Blumengefüster (Blon). 9. Hungarian Dance Nos. 5 and 6 (Brahms). 10. Selection from "A Waltz Dream" (Strauss). In the interval at 10.40: Weather and News.

11.10 p.m.—Close Down.

HUNGARY

BUDAPEST. Magyar Rádío Ujság. W.L.: 555.5 m.; 3 kw.

5.15 p.m.—Orchestral Concert.

8.0 p.m.—Concert of Swedish Music.

10.0 p.m.—Concert of Gipsy Music from the Hotel Hungaria.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb. W.L.: 310 m. (275.2); 0.35 kw.

6.30 p.m.—Esperanto Lesson.

7.15 p.m.—Relay of Opera from the National Theatre, Zagreb, followed by News.

NORWAY

OSLO. Kringkastingselskapet. W.L.: 461.5 m.; 1.5 kw.

7.15 p.m.—News.

7.30 p.m.—Elementary German Lesson.

8.0 p.m.—Time.

8.2 p.m.—Symphony Concert from the Works of Beethoven and Wagner. 1. Symphony No. 6, Op. 68 (Beethoven). 2. Lohengrin—Overture (Wagner). 3. The Mastersingers—Song (Wagner). 4. Siegfried—Selection (Wagner).

9.30 p.m.—Advanced English Lesson.

10.0 p.m.—News and Weather.

10.15 p.m. (approx.)—Close Down.

POLAND

WARSAW. Polskie Radio. W.L.: 1,111 m.; 10 kw. Transmits at intervals from 3.0 p.m.

4.30 p.m.—Talk for Scouts.

4.45 p.m.—Children's Corner.

5.40 p.m.—Concert.

6.40 p.m.—Variety Items.

7.0 p.m.—Talk, "Ju-Jitsu in Japan."

7.55 p.m.—Agricultural Report.

8.15 p.m.—Symphony Concert, relayed from the Philharmonic Hall, Warsaw.

SPAIN

BARCELONA. Radio Barcelona (EAJ1). W.L.: 344.8 m.; 1.5 kw.

12.0 (noon)—Chimes and Weather.

6.0 p.m.—Exchange Quotations.

6.10 p.m.—Talk for Women.

6.30 p.m.—Quintet Selections.

8.30 p.m.—Shorthand Lesson.

9.0 p.m.—Exchange Quotations.

9.5 p.m.—Dance Music.

10.0 p.m.—Chimes and Weather.

10.10 p.m.—Concert relayed by Madrid (EAJ1), on 375 m.

10.55 p.m.—Recital of Dialogues by Sr. and Sta. Joaquin Montero.

11.10 p.m.—Selections of Band Music, by the Badajoz Regiment.

12.0 (midnight, approx.)—Close Down.

CADIZ. Union Radio (EAJ3). W.L.: 362 m. (297); 0.55 kw.

7.5 p.m.—Concert.

7.50 p.m.—News.

8.0 p.m.—Time.

8.2 p.m.—French Lesson.

8.15 p.m.—Recital of Violin and Pianoforte Music.

9.0 p.m. (approx.)—Close Down.

12.0 (midnight)—Experimental Transmission.

MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.

11.45 a.m.—Time, Astronomy and Commerce Notes, Exchange Quotations and News.

2.0 p.m.—Concert by the "Artya" Orchestra. In the intervals: Theatre Notes, Weather and News.

6.30 p.m.—Concert of Chamber Music.

9.30 p.m.—English Lesson.

10.0 p.m.—Time and Exchange Quotations.

10.10 p.m.—Programme relayed from Barcelona (EAJ1), 344.8 m.

SWITZERLAND

BASLE. Basler Radio-Genossenschaft. W.L.: 1,100 m.; 1.5 kw.

8.15 p.m.—Time and Weather.

8.15 p.m.—Concert of Choral and Instrumental Music. 1. Die ehre Gottes aus der Natur—for Choir and Organ (Beethoven). 2. Romance for Violin in F major, Op. 50 (Beethoven). 3. Mass in G major (Schubert). 4. Sonata for Violin in G minor (Tartini). 5. "Maria, wir slugen vor deinem Hause"—Soprano Solo, Op. 17 (Kach).

9.50 p.m.—News and Weather.

10.5 p.m. (approx.)—Close Down.

BERN. Radio-Bern. W.L.: 411 m.; 6 kw. Transmits at intervals from 1.0 p.m.

7.30 p.m.—Time and Weather.

7.35 p.m.—Talk.

8.0 p.m.—Concert Monologues and Music.

9.50 p.m.—News and Weather.

10.30 p.m. (approx.)—Close Down.

GENEVA. Radio-Geneva. W.L.: 760 m.; 1.5 kw.

8.15 p.m.—Exchange, Time and Weather.

8.20 p.m.—Esperanto Lesson.

8.40 p.m.—Concert from the Hotel Metropole.

9.0 p.m.—News.

LAUSANNE. Société Romande de Radiophonie (HB2). W.L.: 850m; 1.5 kw.

8.20 p.m.—Weather.

8.21 p.m.—Concert by the Zavadini Orchestra, from the Old India Restaurant: 1. March (Lindsay). 2. Les filles de Vienne (Diehrer). 3. Les Masques—Overture (Pedrotti). 4. Surcouf—(Planquette).

ZURICH. Radio Genossenschaft. W.L.: 496 m.; 1 kw. Transmits at intervals from 12.30 p.m.

7.57 p.m.—Weather and Time.

8.50 p.m.—Concert of Dance and March Music.

9.50 p.m.—News and Weather.

10.0 p.m.—Dance Music.

U.S.A.

PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 309.1 m. and 64 m.; 25 kw.

12.30 a.m. (Saturday, April 30th).—Agricultural Report.

12.45 a.m.—Talk relayed from Pittsburgh University.

1.0 a.m.—"The Way Down Hour," relayed from New York.

1.30 a.m.—"Royal Hero, Heroine and Heralds," relayed from New York.

2.0 a.m.—"Philo Battery Hour," relayed from New York.

3.0 a.m.—"Reymer's R.V.B. Trio," followed by Time and Weather.

4.0 a.m.—Dance Music.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw. Transmits at intervals from 4.30 p.m.

11.20 p.m.—Baseball Results.

11.25 p.m.—Medical Talk.

11.30 p.m.—Musical Programme.

11.45 p.m.—Talk.

12.0 (midnight)—Selections by the Goldman Band from New York.

1.0 a.m. (Saturday, April 30th).—Programme arranged by the "Society for the Promotion of Research," relayed from the Hotel Van Curler.

1.40 a.m.—Studio Programme.

2.0 a.m.—"Anglo-Persians," relayed from New York.

2.30 a.m.—Dance Music relayed from New York.

PROGRAMMES FOR SATURDAY

(April 30)

NOTE: THE HOURS OF TRANSMISSION ARE REDUCED TO BRITISH SUMMER TIME.

IRELAND

DUBLIN. Dublin Broadcasting Station (2 R.N.). W.L.: 319.1 m.; 1.5 kw.

1.30 p.m.—News and Weather, followed by Gramophone Concert.

7.25 p.m.—News Bulletin.

7.30 p.m.—Verse Recital by the Rev. A. H. Macpherson.

7.45 p.m.—Irish Talk by Seamus O'Duinn.

8.0 p.m.—"Irish Overture," by the Station Orchestra.

8.10 p.m.—"A Mountain Shieling in West Connaught."

8.40 p.m.—"Contrasts," by the Station Orchestra: 1. Symphony No. 36 in C (Mozart), and "Robert le Diable" (Meyerbeer).

9.5 p.m.—Pianoforte Solos by Marguerite Ming.

9.20 p.m.—Songs by Agatha Turley (Soprano).

9.30 p.m.—"Popular Numbers," by the Station Orchestra.

9.40 p.m.—Soprano Solos (contd.).

9.50 p.m.—"The Top Knots"—Concert Party.

10.30 p.m.—Weather.

10.40 p.m. (approx.)—Close Down.

AUSTRIA

GRAZ. Oest Radio Verkehrs. W.L.: 858 m.; 0.5 kw.

4.30 p.m.—Concert by the Kapelle Hüttl. 1. March (Absenger). 2. You, only You—Boston (Arnold). 3. Freudengrüsse (Strauss). 4. Overture to "The Merry Wives of Windsor" (Nikolai). 5. Egyptian Ballet (Luiglu). 6. In a Chinese Temple Garden (Kettelbey). 7. Selection from "Rienzi" (Wagner). 8. Toreador and Andalusian Girl (Rubinstein). 9. Stücke aus Orlow (Granichstaedten). 10. March.

5.30 p.m.—Children's Corner. "Little Elizabeth's Dream"—Fairy Play, and Selections of "Cello and Pianoforte Music and Selected Songs from the Works of Taubert, Hess, Langer, Saint-Saens, and Schubert.

6.30 p.m.—Talk.

7.0 p.m.—Italian Lesson.

VIENNA. Radio-Wien. W.L.: 577 and 517.2 m.; 1.5 and 5 kw. Transmits at intervals from 11.0 a.m. 6.0 p.m.—Education Talk.

7.0 p.m.—"Falstaff"—Opera (Verdi) from the Opera House, Vienna.

10.0 p.m. (approx.)—Dance Music.

BELGIUM

BRUSSELS. Radio-Belgique. W.L.: 508.5 m.; 1.5 kw.

Transmits at intervals from 5 p.m.

7.30 p.m.—"Radio-Chronique."

8.0 p.m.—Concert.

8.30 p.m.—Talk on "Victor Hugo."

8.45 p.m.—Concert (contd.).

9.0 p.m.—Topical Talk.

9.15 p.m.—Dance Music.

10.30 p.m. (approx.)—News and Close Down.

DENMARK

COPENHAGEN. Copenhagen Radio. W.L.: 337 m.; 2 kw.

Programme relayed by Sorø (1,153 m.)

7.0 p.m.—News, Exchange and Time.

7.20 p.m.—Talk.

7.50 p.m.—Introductory Talk on the following Broadcast.

8.0 p.m.—"Il Trovatore"—Opera (Verdi) relayed from the New Theatre, followed by Introductory Talk and Act 2 of "Madame Butterfly" (Puccini). News.

11.0 p.m.—Dance Music from the Industri Restaurant.

12.0 (midnight)—Chimes from the Town Hall.

12.5 a.m. (approx.)—Close Down.

FRANCE

PARIS. Ecole Supérieure (FPTT). W.L.: 464 m.; 0.5 kw.

Transmits at intervals from 8.0 a.m.

2.0 p.m.—Concert.

3.0 p.m.—Chamber Music.

5.0 p.m.—Talk on "The History of Music."

6.0 p.m.—News.

6.15 p.m.—Speeches relayed from the Reception of the Director of the American Red Cross by the Minister of Labour.

8.0 p.m.—Talk on "The Teaching of the Deaf and Dumb."

8.30 p.m.—Talk on "The French Language."

8.45 p.m.—Programme relayed from the Sorbonne on the occasion of the 50th Anniversary of the Invention of the Gramophone by Charles Gros.

10.0 p.m. (approx.)—News, followed by Dance Music.

12.0 (midnight) (approx.)—Close Down.

PARIS. Eiffel Tower (FL). W.L.: 2,650 m.; 5 kw.

10.26 a.m.—Time Signal.

6.45 p.m.—"Le Journal Parlé."

8.0 p.m.—Weather.

8.15 p.m.—Concert.

9.15 p.m.—Educational Programme.

11.26 p.m.—Time Signal.

PARIS. Petit Parisien. W.L.: 340.9 m.; 0.5 kw.

9.0 p.m.—Concert of Operetta Music, by Artists from the "Gaité Lyrique" and the "Trianon Lyrique."

PARIS. Radio-Paris (CFR). W.L.: 1,760 m.; 3 kw.

10.30 a.m.—News, Exchange Quotations and Musical Selections.

12.30 p.m.—Concert. 1. "Gold and Silver"—Valse (Léhar). 2. Pavana (D'Ambrosio). 3. Concerto (Mozart). 4. Moreca—Intermezzo (Sileau). 5. Hamlet—Arloso (Thomas). 6. (a) Plaisir d'amour (Martini-Salabert). (b) La Poule sur le mar (Marot). 7. La Navarraise—Selection (Massenet). 8. Batampes (Debussy). 9. Panurge (Massenet). 10. Le Roi s'amuse (Delibes). 11. Mélodie (Rachmaninoff). 12. La Jota Aragonesa (Saint-Saens). 13. Marche Turque (Mozart-Salabert).

1.50 p.m.—News.

4.30 p.m.—Exchange Quotations.

4.45 p.m.—Concert of Dance Music.

1. Nao e Assim (Smet). 2. Near You (Lucian). 3. Oariestonia (Waltham). 4. Mi Querier (Canaro). 5. Havain Lament (Waltham). 6. A Quel dia (Seras). 7. Islam Melody (Poussigue). 8. El Sabio (Canaro). 9. Samba da Noite (Smet). 10. Pique Piquette (Chobillon).

5.35 p.m.—Market Prices.

7.40 p.m.—Topical Talk.

8.0 p.m.—Talk.

8.15 p.m.—Exchange Quotations and News.

8.30 p.m.—Concert of Vocal and Instrumental Music and Recitations. In the Intervals: News.

TOULOUSE. Radiophonie du Midi. W.L.: 389.6 m.; 2 kw.

5.0 p.m.—News, and Stock Exchange Quotations.

5.25 p.m.—Agricultural Report.

8.0 p.m.—Time, Stock Exchange Quotations and Weather.

8.45 p.m.—Concert arranged by "La Dépêche" 1. "La Grande Duchesse"—Overture (Offenbach). 2. Selection—Pèlerinage breton (Delmas). 3. Sailor Songs (De Severac). 4. La Fleur Merveilleuse (Février). 5. Le Jongleur de Notre Dame (Massenet). 6. Waltz (Gervasio). 7. Air Grave (Delaunay). 8. Légende (Massenet). 9. Say it Again—Foxtrot (Silver).

GERMANY

BERLIN. Koenigswusterhausen. W.L.: 1,250 m.; 8 kw.

Transmits at intervals from 3.0 p.m.

5.30 p.m.—Talk on "The Young Worker."

6.0 p.m.—Talk in Commemoration of "Gauss."

6.30 p.m.—Talk for Veterinary Surgeons.

6.55 p.m.—Talk on "Singers and Violinists."

8.30 p.m.—Programme relayed from Voxhaus.

BERLIN. Voxhaus. W.L.: 566 and 483.9 m.; 2 and 4 kw.

Transmits at intervals from 10.10 a.m.

4.30 p.m.—Orchestral Concert.

6.0 p.m.—Household Hints, Theatre and Film Notes.

6.10—8.30 p.m.—Talks.

8.30 p.m.—Variety Concert. 1. Mandoline Selections. (a) Tarantella internazionale (Tagliaferrri). (b) Soprano Song: Canta pe me (de Curtis). 2. Recitations: (a) Ausrechnet ich! (b) Ein Vergnügen muss der Mensch doch haben. 3. Violin Solos: (a) Karneval von Venidig (Paganini-Buica). (b) Two Guitars (Makarow-Buica). 4. Soprano Solos: (a) Jung und Alt (Kersten-Ziegler). (b) Sowas macht kein Mann (Bährmann). 5. Ocarina Solos: (a) Ach, könnt ich dir ins Auge schau'n. (b) Polka (Trinkhaus). 6. Soprano Solo: "Hy gue ver!" 7. Recitations: (a) Vergessen, (b) Konsequent, konse-

quent muss man sein. 8. Canary Imitation. 9. Spanish Songs. 10. Soprano Solos: (a) Die neuen Generation (Alberts-Ehrlich). (b) Der Mann mit dem kalten Blut (Hallaender). 11. Ocarina Solo. 12. Mandoline Orchestra and Chorus: (a) Tarantella Sincera, (b) Mandolinata (Paladibhle).

10.15 p.m. (approx.)—Weather and News.

10.30 p.m.—Dance Music.

12.30 a.m. (May 1st, approx.)—Close Down.

BRESLAU. Schlesische Funkstunde. W.L.: 315.8 m.; 4 kw.

3.0 p.m.—Elementary French Lesson, relayed from Berlin.

4.30 p.m.—Orchestral Concert. 1. March (Fétras). 2. Potpourri (Aston). 3. Traumdeale (Fuekl). 4. Mondnacht am Rheinsberger See (Blon). 5. Transsylvanische Rhapsodie (Fehervaru). 6. Was ist das?—Potpourri (Geisler). 7. Für dich, mein Schatz (Granichstaetten). 8. Selections from "Paganini" (Léhar). 9. Seh'n Sie sich Berlin an (Hirsch).

6.0 p.m.—Book Review.

6.50 p.m.—Psychology Talk.

7.20 p.m.—Shorthand Lesson.

8.10 p.m.—Borthoven Concert, by Male Choir. 1. Two Voices: (a) Freu dich des Lebens, (b) Hoffmann, (c) O Tobias. 2. Three Voices: (a) Freundschaft, (b) Im Arm der Liebe, (c) Kühl, nicht lau, (d) Das Reden. 3. Four Voices: (a) Es muss sein, (b) Schwenke dich, (c) Glück, (d) Mäzel.

9.0 p.m.—Variety.

10.30 p.m.—Dance Music.

12.0 (midnight) (approx.)—Close Down.

HAMBURG. Norag (ha, in Morse). W.L.: 394.7 m.; 4 kw.

Transmits at intervals from 5.45 a.m.

5.40 p.m.—Talk: "The Evolution of the Organs of Speech."

6.50 p.m.—Theatre Talk: "Indiscretions."

7.5 p.m.—Talk: "Hamburg Past and Present."

7.25 p.m.—Talk: "Music."

7.55 p.m.—Weather.

8.0 p.m.—Scenes from Goethe's "Faust."

10.30 p.m. (approx.)—Concert from the Café Continental, Manover. Weather and News.

11.50 p.m.—Ice Report.

12.0 (midnight) (approx.)—Close Down.

KOENIGSBERG. Ostmarken Rundfunk. W.L.: 329.7 m.; 4 kw.

Transmits at intervals from 9.0 a.m.

6.5 p.m.—Agricultural Notes.

6.30 p.m.—Psychology Talk. "Boredom."

7.0 p.m.—Talk.

7.30 p.m.—Symphony Concert.

9.0 p.m.—Week-end Concert.

11.30 p.m. (approx.)—Close Down.

LANGENBERG. Westdeutscher Rundfunk. W.L.: 408.8 m.; 25 kw.

Programme also relayed by Muenster on 241.9 m.

Transmits at intervals from 1.5 p.m.

4.30 p.m.—Reading of Two Legends, from Dortmund, 283 m.

5.0 p.m.—Talk relayed from Koenigswusterhausen. 1,250 m.

5.30 p.m.—Concert from Cologne, by the Ferry Roth Quartet.

7.15 p.m.—Talk on "India and Indian Culture" from Muenster.

7.40 p.m.—English Lesson from Muenster.

8.0 p.m.—"Westphalian Programme"—Two Short Plays. "Jans Krax"—Play in One Act (Marous, and "He Hat sinen Dag"—Play in One Act (Marcus). (Muenster only)

6.0 p.m.—Relay of the Tenth Annual Concert of the Cologne Disabled Soldiers' Society— from the "Bürgergesellschaft," Cologne.

9.0 p.m.—Variety Concert from Cologne.

11.0 p.m.—Press and Sports News from Cologne.

11.15 p.m.—Dance Music.

1.0 a.m. (Sunday, May 1st.)—Close Down.

LEIPZIG. Mitteldeutscher Rundfunk. W.L.: 365.8 m.; 4 kw.

Transmits at intervals from 10.0 a.m.

6.30 p.m.—Chess Talk.

7.0 p.m.—Talk. "Long Distance Gas Supply."

7.30 p.m.—Talk. "The Occult in Poetry."

9.0 p.m.—Weather and Time.

8.15 p.m.—Wireless Revue.

10.0 p.m.—Press and Sports News.

10.15 p.m.—Dance Music.

12.0 (midnight) (approx.)—Close Down.

STUTT GART. Süddeutscher Rundfunk. W.L.: 379.7 m.; 4 kw.

11.40 a.m.—Weather and News.

1.10 p.m.—News and Gramophone Selections.

3.0 p.m.—Children's Corner.

4.0 p.m.—Concert from the Works of Léhar: 1. Three Selections from "The Merry Widow." 2. Gold and Silver. 3. Five Selections from "The Count of Luxemburg." 4. Serenade—Violin Solo. 5. Song from "Where the Lark Sings." 6. Selections from "Paganini." 7. Melody from "Eva."

6.0 p.m.—Time and Weather.

6.10 p.m.—Reading by Prof. Hanns Philipp from his own novels and sketches.

6.45 p.m.—Talk: "Polynesian Culture."

7.15 p.m.—Time, Weather and Sports.

7.30 p.m.—Max Reger Concert. Relayed from Frankfurt (428.6 m.)

8.30 p.m. (approx.)—Cabaret Concert: 1. Was macht der Mayer (Brooks). 2. Picador (Nichols). 3. Turandot (Stolz). 4. In Helligensstadt steht ein Bankerl (Ascher). 5. Swabian Humour. 6. Der Kammerherr (Niklass-Kempner). 7. Humorous Prose. 8. "Liese, koniu zu mir auf die Wiese" from "Die Zirkusprinzessin" (Kalman). 9. Extase (Ganne). 10. "Der Mitternachtsrast"—A Mysterious Episode in One Act (Carl Struve). 11. Heimweh (Egen). 12. Mein ganzer Reichtum. 13. Der Wildschütz (May). 14. "Eh' man heirat" from "Die Boiarenbraut" (Engel-Berger). 15. Humorous Prose. 16. Eine Frau wie ich (Hirsch). 17. "Mein heissgeliebter Iwan" from "Die Zirkusprinzessin" (Kalman). 18. Wer hat bloss den Käse zum Bahuhof gerollt? (Strassmann).

10.45 p.m. (approx.)—News.

11.0 p.m.—Dance Music from Berlin.

12.0 (midnight) (approx.)—Close Down.

HOLLAND

HILVERSUM. Hilversumsche Draadloze Omroep (HDO). W.L.: 1,060 m.; 5 kw.

12.40 p.m.—Police News.

1.15 p.m.—Musical Programme by the "Trianon Trio."

5.10 p.m.—Talk.

5.40 p.m.—Concert by the Station Orchestra. 1. "Undine"—Overture (Lortzing). 2. Selection from "Carmen" (Bizet). 3. "Ideale" (Tosti). 4. Marechiaré (Tosti). 5. "Tropfen in das Walzermeer" (Gungl). 6. Blaze Away—March (Holzmann).

7.25 p.m.—Book-keeping Lesson.

8.25 p.m.—Police News.

8.50 p.m.—Programme arranged by the Workers' Radio Society.

11.20 p.m.—Concert relayed from the Royal Picture House, Amsterdam.

12.0 a.m. (Sunday, May 1st, approx.)—Close Down.

JUGO-SLAVIA

ZAGREB. Radio-Klub Zagreb. W.L.: 310 m. (275.2 m.); 0.35 kw.

5.0 p.m.—Orchestral Concert.

6.0 p.m.—Children's Corner.

6.30 p.m.—French Lesson.

6.45 p.m.—Talk on "Music."

8.30 p.m.—Concert of Chamber Music. 1. Trio in G minor, Op. 15 (Rubinstein). 2. Trio in E major, Op. 87 (Brahms).

9.45 p.m.—News.

10.0 p.m.—Dance Music.

NORWAY

OSLO. Kringkastingselskapet. W.L.: 461.5 m.; 1.5 kw.

5.30 p.m.—Talk for Scouts.

6.0 p.m.—Children's Corner.

7.15 p.m.—News.

7.30 p.m.—Talk on "Wild Flowers in Spring."

8.0 p.m.—Time.

8.2 p.m.—Concert: 1. Rienzi-Overture (Wagner). 2. Lorelei-Rhein-Klänge (Strauss). 3. Puppenfee—Selection (Bayer). 4. Polka de Concert (Grüinfeld). 5. The Prince's Proposal (Atterberg). 6. Danse Capricieuse (Atterberg).

9.0 p.m.—Talk on "Adventures of War Correspondents."

7.30 p.m.—Concert.

10.0 p.m.—News and Weather.

10.15 p.m.—Dance Music.

12.0 (midnight) (approx.)—Close Down.

SPAIN

BARCELONA. Radio Barcelona (EAJ1). W.L.: 344.8 m.; 1.5 kw.

12.0 (noon)—Chimes and Weather.

6.0 p.m.—Quintet Selections.

8.30 p.m.—Talk on "Animals and Plants."

9.0 p.m.—Quintet Selections.

9.30 p.m.—Verse Recital from the Spanish Classics, by the actor Francisco Mora.

9.50 p.m.—Quintet Selections.

10.0 p.m.—Chimes and Weather.

10.10 p.m.—Programme relayed from Union Radio (EAJ7), Madrid 375 m.

CADIZ. Union Radio (EAJ3). W.L.: 363 (297); 0.55 kw.

7.5 p.m.—Concert: 1. Selection from "The Dollar Princess" (Fall). 2. Alborada Gallega (Velga)—Pianoforte Solos. 3. Song Recital.

8.0 p.m.—Time and News.

8.5 p.m.—Children's Corner.

9.0 p.m. (approx.)—Close Down.

12 (midnight)—Experimental Transmission.

MADRID. Union Radio (EAJ7). W.L.: 375 m.; 3 kw.

11.45 a.m.—Time, Astronomy and Commerce Notes, Exchange Quotations and News.

2.0 p.m.—Concert by the "Arty's" Orchestra. In the Intervals: Theatre Notes, Weather, News, and Review of Books.

6.30 p.m.—Spanish Lesson.

7.0 p.m.—Concert.

9.30 p.m.—Medical Talk.

10.0 p.m.—Natural History Talk.

10.0 p.m.—Time.

10.2 p.m.—"Faust"—Opera (Gounod) by the Studio Players.

12.20 a.m. (Sunday, May 1st.)—News.

12.30 a.m. (approx.)—Close Down.

SWITZERLAND

BERN. Radio-Bern. W.L.: 411 m.; 6 kw.

Transmits at intervals from 1.0 p.m.

7.30 p.m.—Time and Weather.

7.35 p.m.—Reading.

8.15 p.m.—Concert from Basle (1100 m.).

10.0 p.m.—News and Weather.

10.15 p.m.—Orchestral Selections.

10.30 p.m.—Dance Music.

12 (midnight) (approx.)—Close Down.

LAUSANNE. Société Romande de Radiophonie (HB2). W.L.: 850 m.; 1.5 kw.

12.50 p.m.—Weather and Time.

8.20 p.m.—Weather.

8.21 p.m.—Talk—"Famous Grecian Towns—Sparta."

8.50 p.m.—Programme from Zurich (496 m.).

ZURICH. Radio Genossenschaft. W.L.: 496 m.; 1 kw.

Transmits at intervals from 12.30 p.m.

7.57 p.m.—Time and Weather.

8.0 p.m.—Concert from the Zurich Conservatoire. Mandolin Music by the "Carmen" Orchestra.

10.10 p.m.—News and Weather.

10.20 p.m.—Dance Music.

10.40 p.m. (approx.)—Close Down.

PITTSBURGH. Westinghouse Electric (KDKA). W.L.: 309.1 m. and 64 m.; 25 kw.

12.15 a.m. (Sunday, April 31st.)—Weekly Meeting of the Pittsburgh Home Radio Club.

12.30 a.m.—Concert.

12.50 a.m.—Talk relayed from Pittsburgh University.

1.10 a.m.—Symphony Concert, relayed from Boston.

SCHENECTADY, N.Y. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.

Transmits at intervals from 4.30 p.m.

11.30 p.m.—Musical Programme, relayed from the Hotel Onondaga, Syracuse.

12.0 (midnight).—"The Week-Enders," relayed from New York.

1.0 a.m. (Sunday, May 1st.)—Musical Programme from Rochester, N.Y.

2.0 a.m.—Talk. "Our Government."

2.10 a.m.—Dance Music, relayed from New York.

4.0 p.m. (approx.)—Close Down.

SCHEMATA. General Electric Company (WGY). W.L.: 379.5 m.; 60 kw.

Transmits at intervals from 4.30 p.m.

11.30 p.m.—Musical Programme, relayed from the Hotel Onondaga, Syracuse.

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4.0 p.m. (approx.)—Close Down.

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4.0 p.m. (approx.)—Close Down.

Stations in Order of Wavelength

The following wavelengths have been corrected in accordance with the latest plan adopted by the Union Internationale de Radiophonie at Geneva.

- Metres.**
- EUROPEAN.**
- 4000 } Berlin (Koenigswusterhausen) APP, 8 kw.
 - 2900 } Paris (Eiffel Tower), FL, 5 kw. DAILY—6.0 p.m., Talks and News; 7.15 p.m., Concert.
 - 2525 } Berlin (Wolf's Bureau). Intermittent News during the day.
 - 2000 } Kovno (Lithuania), 2 kw.
 - 1950 } Scheveningen Haven (Holland), 2.5 kw.
 - 1800 } Norddeich (Germany). WEEKDAYS—1 a.m., Weather Report.
 - 1760 } Paris (Radio-Paris), CFB, 3 kw. WEEKDAYS—12.30 p.m., Concert; SUNDAY, 12.45 p.m., Concert.
 - 1600 } Daventry (5XX), 25 kw.
 - 1450 } Moscow (Central), RDW, 40 kw.
 - 1400 } Nijni Novgorod (Russia), 1.2 kw.
 - 1305 } Motala, 30 kw.
 - 1250 } Berlin (Koenigswusterhausen) AFT, 8 kw. Relays Voxhaus.
 - 1200 } Boden (Sweden), SASE, 1.5 kw. Relays Stockholm.
 - 1200 (2174) } Luxembourg Haven (Holland), 0.25 kw.
 - 1153.8 } Sorø (Denmark), 1.5 kw. Relays Copenhagen.
 - 1150 } Ryvang (Denmark), 0.5 kw.
 - 1111 } Warsaw (Poland), 10 kw. DAILY—8.30 p.m.—Concert and News.
 - 1110 } Kbely (Czecho-Slovakia), 1 kw. Transmits DAILY—7.0—8.30 p.m.
 - 1100 } Basle (Switzerland), 0.25 kw. DAILY—9.50 p.m., News.
 - 1100 } De Bilt (Holland) WEEKDAYS—9.15 p.m., Weather.
 - 1060 } Hilversum (Holland), HDO, 5 kw. DAILY—8.50 p.m., Concert.
 - 1010 } Moscow (Popoff), 2 kw.
 - 1000 } Leningrad (Russia), 10 kw.
 - 940 } Leningrad (Russia), 2 kw. WEEKDAYS—8.0 p.m., Lecture; 7.0 p.m., News; 7.30 p.m., Concert or Opera. SUNDAY—6.0 p.m., Lecture; 7.0 p.m., News; 7.30 p.m., Concert.
 - 850 } Lausanne (Switzerland), HB2, 1.5 kw. DAILY—8.5 p.m., Concerto. Talk.
 - 760 } Geneva (Radio-Geneva), 1.5 kw. WEEKDAYS—8.40 p.m., Concert and News.
 - 720 } Ostersund (Sweden), 1 kw. Relays Stockholm.
 - 577 } Freiburg (Germany).
 - 577 } Vienna (Radio-Wien), 1.5 kw. WEEKDAYS—4.15 p.m., Concert. SUNDAY—7.30 p.m., Opera.
 - 566 } Berlin (Magdeburger Platz), 2 kw.
 - 566 } Bloemendaal (Holland), 0.04 kw. SUNDAYS—10.40 a.m. and 5.40 p.m., Church Service.
 - 556 } Hamar (Norway), 0.7 kw.
 - 555.6 } Budapest (Hungary), 3 kw. SUNDAY—11.0 a.m., Concert. 10.0 p.m., Dance Music. WEEKDAYS—5.0 p.m., Weather Report.
 - 545.6 } Sundsvad (Sweden) SASD, 0.5 kw.
 - 535.7 } Munich (Germany), 1.5 kw. SUNDAY—11.30 a.m., Concert.
 - 526.5 } Riga (Latvia), 2 kw. DAILY—11.35—12 a.m., and 6—9.30 p.m., Concert, News, Weather.
 - 517.2 } Vienna (Rosenhugel), 5 kw.
 - 488.5 } Brussels, 1.5 kw. DAILY—8.0 p.m., Radio-Chronique. 8.30 p.m., Concert or Opera. 10.30 p.m.—News.
 - 504 } Porsgrund (Norway), 0.7 kw.
 - 500 } Tromsø.
 - 500 } Aberdeen (2BD), 1.5 kw.
 - 500 } Uppsala (Sweden), 0.25 kw. Relays Stockholm.
 - 497.5 } Linköping (Sweden), 0.25 kw. Relays Stockholm.
 - 496 } Zurich (Switzerland), 1 kw. DAILY, except TUESDAY. 3.0 p.m., Concert. SUNDAY—8.0 p.m., Concert.
 - 491.2 } Bournemouth (8BM), 1.5 kw.
 - 483.9 } Berlin (Witzleben), 4 kw.
 - 478.1 (476.2) } Lyons (France) (La Doua). PTT, 1 kw. MON., WED., and FRI.—9.45 p.m., Concert. SUN., TUES., THURS., and SAT.—Relays Ecole Supérieure.
 - 468.8 } Langenberg (Germany), 25 kw.
 - 464 } Paris (Ecole Supérieure) EPTE, 0.5 kw. DAILY—10.0 p.m., Concert.
 - 461.5 } Oslo (Norway), 1.5 kw. DAILY—8.0 p.m., Concert.
 - 460 (500) } Barcelona (Spain) (Radio-Catalana). EAJ13, 1 kw.
 - 454.5 } Stockholm (SASA), 1.5 kw. DAILY—9.15 p.m., News. Weather Report.
 - 450 } Rome (IRO), 3 kw. WEEKDAYS—9.10 p.m., Concert. 10.50 p.m., News. SUN., 9.0 p.m., Concert or Opera.
 - 450 } Moscow (Trades Union), 2 kw.
 - 443 } Rjukan (Norway), 0.05 kw.
 - 441.2 } Brunn (Czecho-Slovakia), 2.4 kw. DAILY—7.0 p.m., Concert and News. TUES. and THURS.—5.40 p.m., Talk for Women. SUN.—11.0 a.m., Concert.
 - 440 } Reval (Estonia). DAILY—7—8 p.m., Concert.
 - 436 (400) } Bilbao (Spain) (Radio Club de Vizcaya). EAJ9, 1 kw.
 - 434.8 } Frederikstad (Norway), 0.7 kw.
 - 428.6 } Frankfurt-on-Main (Germany), 4 kw. WEEKDAYS—8.15 p.m., Concert or Opera.
 - 422 } Cracow (Poland), testing.
 - 420 } Moscow (Radio-Peredacha), 2 kw.
 - 419.5 } Bordeaux (Lafayette).
 - 418 (294.1) } Bilbao (Spain) Radio-Vizcaya EAJ11, 2 kw.
 - 416.7 } Göteborg (Sweden) SASB, 1 kw. EVERY THURSDAY—9.15—11 p.m. Relays Foreign Stations.
 - 411 } Berne (Switzerland), 6 kw. DAILY—8 p.m., Concert. SUNDAY—7.0 p.m., Concert.
 - 405.4 } Glasgow (5SC), 1.5 kw.
 - 402.5 } Salamanca (Spain) EAJ22, 0.5 kw. DAILY—9.30 p.m., Concert. 10.30 p.m., Dance Music.
 - 400 } Cork (Irish Free State) GCK, 1.5.
 - 400 } Bremen (Germany), 0.7 kw. Relays Hamburg.
 - 400 } Falun (Sweden), SMZK, 1.5 kw.
 - 400 } Mont de Marsan (France), 0.3 kw. WEEKDAYS—8.30 p.m., News and Concert.
 - 400 } Plymouth (SPY), 0.2 kw.
 - 394.7 } Hamburg (ha, in morse), 4 kw. DAILY 8.0 p.m., Concert or Opera.
 - 393 } Radio España (Madrid).
 - 389.6 } Toulouse (France) (Rad. du Midi), 2 kw. DAILY—12.40 p.m., Concert. 8.50 p.m., Concert.
 - 364.6 } Manchester (2ZY), 1.5 kw.

- Metres.**
- 379.7 } Stuttgart (Germany), 4 kw. DAILY 8.0 p.m., Concert or Opera. SUNDAY—11.30 a.m., Service.
 - 375 } Helsinki (Finland), 2 kw. 11.0 a.m., Exchange Quotations. DAILY—6—9 p.m., Concert.
 - 375 } Madrid (Union Radio), EAJ7, 3 kw. DAILY—2.30 p.m., Concert, SUNDAYS—10.30 p.m., Concert or Play.
 - 370.4 } Bergen (Norway), 1.5 kw. 10.0 p.m., News and Weather. SUNDAYS—11.0 a.m., Service.
 - 368 } Tammerfors (Finland), relays Helsingfors.
 - 365.8 } Leipzig (Germany), 4 kw. DAILY—3.30 p.m., Concert.
 - 362 (297) } Cadiz (Spain) EAJ3, 0.55 kw. DAILY—7.0—10.0 p.m., Concert. 1 a.m., Experimental Concert.
 - 361.4 } London (2LO), 3 kw.
 - 358 } Graz (Austria), 0.5 kw. Relays Vienna.
 - 353 } Cardiff (5WA), 1.5 kw.
 - 350 } Paris (Radio LL), 0.25 kw. MONDAY, WEDNESDAY, and FRIDAY—10.0 p.m., Concert.
 - 348.9 } Prague (Czecho-Slovakia), 5 kw. DAILY—8.0 p.m., Concert.
 - 346 (434.8) } San Sebastian (Spain), EAJ8, 2 kw. DAILY—2.30 p.m., and 10.0 p.m., Concert.
 - 344.8 } Barcelona (Spain) Radio-Barcelona EAJ1, 1.5 kw. DAILY—6.0 p.m., Concert.
 - 344.8 (400) } Seville (Spain), EAJ5, 1 kw.
 - 343.9 (277.8) } Seville (Spain) (Union Radio) EAJ17, 1 kw.
 - 340.9 } Paris (Petit Parisien), 0.5 kw. SUNDAYS, TUESDAYS, THURSDAYS and SATURDAYS, 9.0 p.m., Concert.
 - 340 (275.2) } Madrid Radio Castilla EAJ4.
 - 337 } Copenhagen, 2 kw. DAILY—8.30 p.m., Concert. MONDAYS—5.30 p.m., English Lesson.
 - 333.3 } Naples (INA). EVERY DAY—9.0 p.m., Concert.
 - 333.3 } Reykjavik (Iceland), 0.5 kw.
 - 329.7 } Koenigsberg (Germany), 1 kw. DAILY—8.10 p.m., Concert.
 - 326.1 } Birmingham 5IT, 1.5 kw.
 - 325 (254.2) } Malaga (Spain) EAJ25, 1 kw.
 - 325 (566) } Saragossa (Spain) EAJ23.
 - 322.6 } Milan (IMI), 1.5 kw. DAILY—8.0 p.m., Concert.
 - 319.1 } Dublin 2RN, 1.5 kw. WEEKDAYS—7.30 p.m.—10.30 p.m., Concert and News. SUNDAYS—8.30—10.30 p.m., Concert.
 - 315.8 } Breslau (Germany), 4 kw. DAILY—8.25 p.m., Concert or Opera. SUNDAY—11 a.m., Sacred Recital.
 - 312.5 } Newcastle (5NO), 1.5 kw.
 - 310 (275.2) } Zagreb (Jugo-Slavia), 0.35 kw. DAILY—7.0 p.m.
 - 309 } Marseilles PTT, 0.5 kw. WEEKDAYS—9.0 p.m., Concert.
 - 306.1 } Belfast (2BE), 1.5 kw.
 - 306 (500) } Madrid (Radio-Madrileña) EAJ12, 2 kw.
 - 303 } Nuremberg (Germany) 0.7 kw. Relays Munich.
 - 300 } Bratislava (Czecho-Slovakia), 0.5 kw.
 - 300 } Kosice (Czecho-Slovakia), 5 kw.
 - 297 } Liverpool (6LV), 0.2 kw.
 - 287 } Hanover (Germany), 0.7 kw. Relays Hamburg.
 - 297 } Varberg, Relays Stockholm.
 - 297 } Jyväskylä (Finland), 0.2 kw. Relays Helsingfors.
 - 297 } Agen (France), 0.25 kw. TUES. and FRI.—9.30 p.m., Concert.
 - 294.1 } Dresden (Germany), 0.7 kw. Relays Leipzig.
 - 294.1 } Hull (6KH), 0.2 kw.
 - 294.1 } Dundee (2DE), 0.2 kw.
 - 294.1 } Innsbruck (Austria), 1 kw. (Relays Vienna).
 - 294.1 } Stoke (England), (6ST), 0.2 kw.
 - 294.1 } Swansea (5SX), 0.2 kw.
 - 294.1 } Uddevalla (Sweden). Relays Stockholm.
 - 291.3 } Lyons (Radio-Wien), 1.5 kw. WEEKDAYS—7.15 p.m., News. WEEKDAYS (except MON.), 8.0 p.m., Concert.
 - 288.5 } Edinburgh (2EH), 0.2 kw.
 - 283 } Dortmund (Germany) 0.7 kw. Relays Muenster.
 - 279 (275.2) } Cartagena (Spain), EAJ16, 1 kw. DAILY—8.30 p.m., Concert.
 - 277.8 } Leeds (2LS), 0.2 kw.
 - 277.8 } Trollhattan (Sweden), SMXQG, 0.12 kw.
 - 275.2 } Nottingham (England), 5NG, 0.2 kw.
 - 275.2 } Norrköping (Sweden) SMVV, 0.25 kw.
 - 275.2 } Angers (France) (Radio-Anjou), 0.5 kw.
 - 272.7 } Sheffield (6FL), 0.2 kw.
 - 272.7 } Danzig, 1.5 kw. DAILY—11.0 a.m., Weather. 11.30 a.m., Concert. 2.0 p.m., Exchange Quotations. 4.0 p.m., Relays Koenigsberg.
 - 272.7 } Klagenfurt (Austria).
 - 272.7 } Cassel (Germany), 0.7 kw. Relays Frankfurt.
 - 272 (294.1) } Madrid (Radio Iberica). EAJ6.
 - 270.9 } Posen (Poland).
 - 260.9 } Malmö (Sweden) SASC, 0.5 kw. SUNDAYS—12.0 a.m., Divine Service.
 - 260 } Toulouse (France) PTT, 5 kw.
 - 254.2 } Kiel (Germany), 0.7 kw. Relays Hamburg.
 - 252.1 } Bradford (2LS). Transmits Leeds Programmes.
 - 252.1 } Kaimar (Sweden) SMSN, 0.25 kw. Relays Stockholm.
 - 252.1 } Montpellier (France), 1 kw. WEEKDAYS—8.45 p.m., News. 9.0 p.m., Concert or Talk.
 - 252.1 } Stettin (Germany). Relays Berlin, 0.45 kw.
 - 252.1 } Saffle (Sweden) SMTS, 0.5 kw. Relays Stockholm.
 - 250 } Eskilstuna (Sweden) 0.25 kw. Relays Stockholm.
 - 250 } Glevitz (Germany), 0.7 kw. Relays Breslau.
 - 243.9 } Trondheim (Norway).
 - 241.9 } Muenster (Germany) m.s. In Morse, 1.5 kw.
 - 238.1 } Bordeaux (Relays PTT. Paris), 0.5 kw.
 - 233 } Uleaborg (Finland). Relays Helsingfors, 0.2 kw.
 - 230 } Juan les Pins (France), 0.5 kw.—9—11 daily.
 - 229 } Helsingborg relays Stockholm.
 - 229 } Umea, relays Stockholm.
 - 225.6 } Belgrade (Serbia), 2 kw. Testing.
 - 222.2 } Strasbourg, 0.1 kw. TUESDAY and THURSDAY—10.0 p.m.—Concert, Talk and News.
 - 221 } Karlstad (Sweden), 0.25 kw. Relays Stockholm.
 - 218 } Orebro. Relays Stockholm.
 - 211.3 } Kiev (Russia), 2 kw.
 - 204.1 } Gävle (Sweden), SMXF, 0.25 kw. Relays Stockholm.
 - 202.7 } Kristinehamn (Sweden) SMTY, 0.1 kw. Relays Stockholm.

It should be noted that the Spanish stations have not yet adopted their new allocations, which we are therefore showing in parentheses.

- Metres.**
- 201.3 } Jönköping (Sweden) SMZD, 0.5 kw. Relays Stockholm.
 - 196 } Karlskrona (Sweden) SMSM, 0.25 kw. Relays Stockholm.
 - 180 } Bezier', 1 kw.
- U.S.A.**
- 545.1 } St. Louis (KSD), 1.5 kw.
 - 545 } St. Louis (KFUO), 1.5 kw.
 - 535.5 } Chicago (KWY), 3.5 kw.
 - 526 } Omaha, Nebraska (WOAW).
 - 516.9 } Detroit (WJR), 5 kw.
 - 516.9 } Detroit (WCX), 1.5 kw.
 - 508.2 } Philadelphia (WOO), 1.5 kw.
 - 491.5 } Portland (KGW).
 - 491.5 } New York (National Broadcasting Co.) (WBAF), 2 kw.
 - 483.8 } Davenport (WOC), 5 kw.
 - 469 } Washington (WCAP), 1.5 kw.
 - 467 } Los Angeles (KFI), 5 kw.
 - 461.3 } Pittsburgh (WCAG), 1.5 kw.
 - 461 } Shenandoah, Iowa (KPNF).
 - 454.3 } Boundbrook (National Broadcasting Co.) WJZ, 40 kw.
 - 430.1 } Boston, Mass. (WNAC), 0.5 kw.
 - 428.3 } Atlanta (WSB), 5 kw.
 - 428.3 } San Francisco (KPO), 1 kw.
 - 422.3 } Cincinnati (WLW), 5 kw.
 - 416.4 } Minneapolis (WCCO), 0.5 kw.
 - 410.4 } Staten Island, N.Y. (WBBR), 0.5 kw.
 - 405 } New York (WJY), 0.75 kw.
 - 389.4 } Cleveland (WTAM), 1.5 kw.
 - 384.4 } New York (WLWL), 1 kw.
 - 379.5 } Troy (WHAZ), 1.5 kw.
 - 379.5 } Schenectady (General Electric Co.) WGY, 60 kw.
 - 370.2 } Chicago (WGN), 1 kw.
 - 361.2 } Oaklands (KGO), 5 kw.
 - 352.7 } Detroit (WWJ), 1.5 kw.
 - 348.6 } Washington (KWSC), 0.5 kw.
 - 345 } Chicago (WLS), 0.5 kw.
 - 344.6 } Zion, Ill. (WGBD), 5 kw.
 - 340.7 } New York (WMCA), 0.5 kw.
 - 337 } Northfield (Carleton College) KFMX.
 - 333.1 } Springfield (WBZ), 7.5 kw.
 - 329.5 } Chicago (WJAZ), 10 kw.
 - 322.4 } Denver (KO.A).
 - 316 } Michigan (Radio Lighthouse) WEMC, 0.55 kw.
 - 315.6 } New York (WGBS), 1 kw.
 - 309 } Pittsburgh East (Westinghouse Electric) KDKA, 25 kw.
 - 299.8 } Atlantic City (WPG), 7.5 kw.
 - 288.3 } Hastings, Nebraska (KFKX), 2 kw.
 - 280.2 } Boston, Mass (WNAE), 0.5 kw.
 - 278 } Kansas City (WOQ), 1 kw.
 - 270 } Detroit (WGHP).
 - 226 } Chicago (WBBM), 1.5 kw.
 - 64 } Pittsburgh East (Westinghouse Electric) (KDKA).
 - 32.79 } Schenectady (General Electric Co.) 2XAF. Tues. and Thurs. at 6 p.m. Sats. at 2.30.
 - 22 } Schenectady (General Electric Co.) 2XAD.
 - 14 } Pittsburgh East (Westinghouse Electric) (KDKA).
- CANADA.**
- 516.9 } Edmonton (CNRE), 0.5 kw.
 - 434.8 } Calgary (CNCK), 0.5 kw.
 - 434.5 } Toronto (Canada) CNRT, 0.5 kw.
 - 434.4 } Ottawa (Canada) CNRO, 0.5 kw.
 - 411 } Montreal (CKAC), 1.5 kw.
 - 411 } Montreal (CNRM), 0.5 kw.
 - 383.4 } Winnipeg (CKY), 0.5 kw.
 - 383.4 } Winnipeg (CNRW), 0.5 kw.
 - 356.9 } Toronto (Canada), CFCA, 0.5 kw.
 - 356.9 } Toronto (CKGL), 0.5 kw.
 - 329.5 } Saskatoon (CNRS), 0.5 kw.
 - 322.4 } Moncton, N.B. (CNRA), 0.5 kw.
 - 312.3 } Regina (CNRR), 0.5 kw.
 - 291 } Vancouver (CNRV), 0.5 kw.
- SOUTH AMERICA.**
- 380 } Lima, Peru (OAX) 6 kw.
- SOUTH AFRICA.**
- 450 } Johannesburg (JB), 0.5 kw.
 - 400 } Durban, 1.5 kw.
 - 375 } Cape Town, 1.5 kw.
- AFRICA.**
- 1850 } Radio Carthage (Tunis) TNV, 5 kw. News, 5.0—6.20 p.m.; Concert, 7.0—10.0 p.m.
 - 310 } Algiers (PTT), 2 kw.—Concert, 7.10 p.m.
 - 306 } Radio Casa-Bianca (Morocco), 2.5 kw.—SUNDAY, 11.0 a.m.—12 noon; 2.0—4.0 p.m.; Dance Music, 8.0—12.0 p.m. WEEKDAYS, 7.0—10.0 p.m.
- AUSTRALIA.**
- 1250 } Perth (6WF), 1.5 kw.
 - 442 } Sydney (2FC), 5 kw.
 - 391 } Adelaide (6CL).
 - 385 } Brisbane (4QG), 0.725 kw.
 - 371 } Melbourne (3LO), 5 kw.
- NEW ZEALAND.**
- 70 } Dunedin (4YA).
 - 330 } Auckland (1YA), 0.1 kw.
 - 240 } Christchurch (3AC), 0.05 kw.
- INDIA.**
- 425 } Calcutta (5AF), 0.5 kw.
 - 375 } Bombay (2FV), 0.1 kw.
 - 350 } Rangoon, Burma (2HZ), 0.35 kw.
- CEYLON.**
- 800 } Colombo, 1.5 kw.
- JAPAN.**
- 375 } Tokyo (JOAK), 1 kw.

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22nd March.

Messrs. Burndept Wireless Ltd.,
Blackheath, London, S.E. 3.

DEAR SIRS,—I have now had many opportunities during the past week of thoroughly testing the All-Wave 7 Valve Super Het. I constructed with your components, and feel sure that the results obtained will be of interest to you.

Taking one page from my log book (Sunday, March 20th) I find the following entries: Stettin, Klagenfurt, Nuremberg, Langenberg, Breslau, Milan, Stuttgart, Hamburg, Radio Toulouse, Berlin (483 m.), Berne, PTT Paris, Brunn, Rome, Radio Espana, Madrid (EAJ 2), Frankfort-on-Main, Madrid (EAJ 7), Brussels, Aberdeen, Porsgrund (Norway), PTT Lyons, Aberdeen, Birmingham, Bournemouth, Hilversum, Radio Paris, Koenigswusterhausen, all loud speaker strength; in fact, these stations, most of which were heard when London was operating, were tuned in on the loud speaker without difficulty. Reception was made on an outside aerial, short indoor, and a frame aerial (which was not specially made for this receiver). But for the advantage of the directional properties of the latter and greater freedom from interference, there was but little to choose between them. Four facts particularly impressed me—namely: (a) remarkable selectivity of the circuit; (b) excellent reaction control; (c) smooth working of potentiometer (volume control), and lastly, but by no means least, the great purity of tone the reproduction on a cone loud speaker, with your LL 512 valve is all that can be desired.

As you are aware, my special work of searching the ether nightly calls for a first-class instrument, capable not only of reaching out, but of giving a clear reception of transmissions under all reasonable circumstances. In the "All-Wave" I have found a most trustworthy and reliable assistant.

Owing to the pressure of work I have been unable to "sit up for America," but have no doubt whatever that several of the U.S.A. stations can be added to my log.

The possibility, by means of interchangeable plug in coils, of covering all wavelengths is a feature of considerable utility, as, in this manner, the range of the receiver is greatly extended. In every way the All-Wave fulfils my very exacting requirements.

I might add that for the 2LO transmissions I need no aerial whatsoever, but have found it beneficial to connect the receiver to earth. In these circumstances I work two loud speakers to my entire satisfaction.

Yours faithfully, (Signed) J. GODCHAUX ABRAHAMS.

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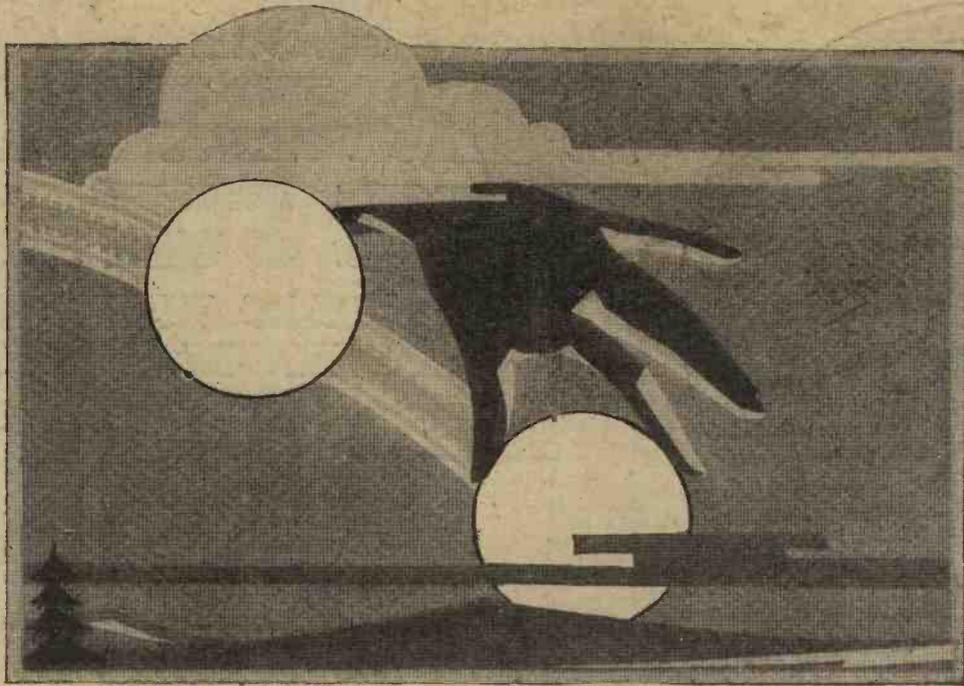
Please send me the ALL WAVE CONSTRUCTIONAL ENVELOPE. I enclose Postal Order for 1/- to cover cost.

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Date W.R.



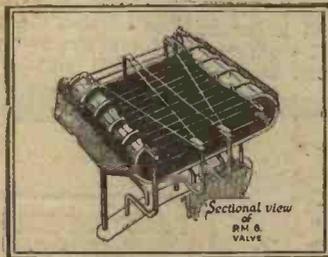
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