

. SCHOOL BROADCASTING

INTELLECTUAL CO-OPERATION SERIES

SCHOOL BROADCASTING

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INTRODUCTION

THE announcement of any notable discovery in the world of applied science is always the signal for admiration and astonishment, but once these have passed, we realise that the responsibilities and duties already shouldered by mankind have been suddenly increased. Having recognised the existence of a force, the nature of which would seem to be beyond human understanding, we must endeavour to utilise it for a reasonable and practical purpose. The newly discovered scientific means of disseminating knowledge and information and, more particularly, wireless broadcasting, thus give rise to urgent problems of organisation. Broadcasting is developing daily; telephony is becoming inter-continental and, very soon, television will doubtless contribute a new element to these powerful systems of dissemination.

Like the cinematograph, broadcasting was originally intended to provide entertainment and recreation; but the importance of the rôle of these fresh "international forces" that are impressing the public more and more forcibly and which cannot be restrained, is asserting itself with an ever increasing insistence from day to day. It must therefore be controlled and guided into the proper channels.

Broadcasting and the cinematograph are capable of becoming invaluable auxiliary instruments in the field of education. This was recognised by the League of Nations when it founded its International Educational Cinematograph Institute in Rome, an institution which has, in its particular sphere, obtained highly promising results. With regard to the questions with which we are here concerned, several countries have, as the result of an enquiry conducted during

the year by the Rome Institute, agreed that the showing of educational films in programmes of a recreational character should be compulsory.

Further, in pursuance of a decision of the League of Nations Assembly and on the proposal of the International Committee on Intellectual Co-operation, the International Institute of Intellectual Co-operation has collected, with the collaboration of the International Broadcasting Union, voluminous documentary material on the experiments in school broadcasting now being carried out in most countries of the world.

The object of these investigations was to reveal the advantages and possibilities which broadcasting offered, either for instructing youth in the aims of the League of Nations or for the general education of school children and adults.

With this documentation in its possession, the Institute of Intellectual Co-operation will, this year, be able to consult the educational departments of the different governments with a view to standardising methods, in so far as circumstances permit, and to giving, beyond the frontiers, the maximum impetus to this form of instruction which, although only subsidiary, is full of possibilities that are perhaps still unsuspected.

Following out this idea, technical problems to be solved by the schools taking broadcast lessons, for example: the choice of receivers, the distribution of wave-lengths, the arrangement of school time-tables, the acoustic properties of classrooms, etc., will this year be examined in collaboration with the International Broadcasting Union.

This represents, however, only one of the aspects of the part that broadcasting can play in social life. If, on the one hand, it can be used in the service of

education, it can, on the other, be made to serve the passion of political strife, to spread false news and to become an instrument of discord and enmity — but it may also be developed as one of the most valuable auxiliaries at our disposal for the furthering of “moral disarmament”. It will be readily understood, therefore, that the choice of the means best calculated to extract all the advantages from broadcasting and, at the same time, to check its baneful influences, becomes an extremely delicate problem. Rules and customs adapted to these new problems need to be established and agreed upon; the Moral Disarmament Committee of the Disarmament Conference examined this aspect of the question in collaboration with the Institute of Intellectual Co-operation.

In a comparative study prepared with the help of qualified experts, the Institute has examined the possibilities that broadcasting offers for the rapprochement of nations. It is in this field that the question of the influence exercised by wireless on the mind of the people comes into play with the greatest force, for it is an influence which is far more direct, far more violent, and one that retains a remarkably more human aspect — and consequently of a nature to engender bitterness and hatred — than that exercised by gramophone records or even the cinematograph.

It is obvious that a brief statement mechanically recorded will have incalculably less persuasive force than an address delivered before the microphone. On the other hand, a speaker broadcasting from a studio becomes endowed with the propaganda force of a group of orators or of a society. If he speaks on behalf of an association, a political party for example, the weight of his arguments and suggestions is multiplied many times over by the broadcasting appa-

ratus. Actual facts have already proved the existence, not to mention the dangers, of this unseen power. It is true that, in many countries, the government exerts a controlling influence on wireless transmitters and a relative guarantee of equilibrium is assured; but, in times of crisis, it should be possible to rely on definite laws and regulations, on codified rules and on tradition. Therefore, agreements of principle providing for the preventive as well as the positive measures to be taken are now receiving the attention of the governments.

In connexion with the measures advocated for the promotion of friendly relations between peoples, the methods of education destined for adult listeners may, in years to come, constitute an extremely valuable broadcasting activity. Very little has so far been attempted in this sense. It is of paramount importance that the different countries should devote serious attention to the organisation of post-school instructional courses so that broadcasting may, in that field also, act as a valuable adjuvant and become what has been called the "unseen university of the people".

This book, devoted to the utilisation of broadcasting in primary, secondary and higher education, contains the studies communicated to the International Institute of Intellectual Co-operation by educators and by the organisers of instructional courses in twenty-five countries; they represent an accumulation of experience which will enable all who are interested in school broadcasting to make their own comparative analyses and to find useful suggestions.

The general report drawn up by the Institute as the result of this enquiry furnished the material for the first part of this volume, in which, while setting forth opinions which at times are conflicting, an endeavour has been made to stress the fundamental

rules and guiding principles, which, at this stage of the investigations and in the present conditions governing the organisation of educational broadcasting, may be regarded as representing the views held by the majority of educators.

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PART I

**THE LEADING PRINCIPLES
OF SCHOOL BROADCASTING**

PART I

THE LEADING PRINCIPLES OF SCHOOL BROADCASTING

I

The Place of Broadcasting in Primary and Secondary Education

The opinion at present held by the majority of educators is that, in virtue of its very nature, broadcasting cannot be anything more than a subsidiary instrument of education and that its use is confined to certain limits. This uniform and more or less mechanised form of instruction dispenses with the need for personal contact between teacher and pupil and consequently tends to make the latter a too passive listener, whereas the essential aim of education should be to develop the individual faculties of pupils in a gradual process of intellectual training ; this implies the personal action of the teacher, who is acquainted with the aptitude of each member of his class, and a call upon the pupils effectively to participate in his teaching.

These considerations, the importance of which cannot be ignored, have not escaped the notice of specialists in school broadcasting. Some of these experts express the view that these considerations apply more especially to primary schools : the essential task of the educator should consist in stirring the activity of the child's mind by encouraging him to observe and concentrate his thoughts on concrete objects. In this field more than in any other, the age of the pupils demands direct action on the part of the teacher and fairly frequent repetitions. Broadcasting, which appeals only to the sense of hearing, the development of which is relatively slow among children, and which makes it possible for them to adopt a purely receptive attitude, should therefore be utilised very sparingly in elementary education, and then rather for the purpose of

recreation. Educational Broadcasting therefore should rather be confined to secondary schools.

Other experts, on the contrary, are of the opinion that there are greater possibilities for the use of educational broadcasting in the primary schools, the less advanced programmes of which can be more easily combined with the wireless courses. In secondary schools, where the tuition given is of a more specialised character, teachers will sometimes experience serious difficulty in fitting the present broadcast programmes in their normal time-table and curriculum : this difficulty is mentioned, in particular, in the report drawn up by the *International Committee for the Educational and Social use of Films and Broadcasting*.

Fundamentally, this divergence of opinions is more apparent than real, since those who hold the first opinion are thinking chiefly of the elementary primary schools, while those in favour of a more general use of broadcasting in conjunction with primary school education agree that it can scarcely be expected to produce good results with children under 11. This is notably the case in England, where broadcast lessons are regularly taken by 3,343 primary schools and 323 secondary schools. In Germany, according to the report prepared by the International Broadcasting Union, school broadcasts are followed more generally by pupils between the ages of 12 and 16.

However this may be, the experts are practically unanimous in the view that the rôle of broadcasting should be purely supplementary.

Broadcasting, therefore, should not be used for the normal teaching provided for in the school curriculum, the elements of which can be found in the usual text-books. As already stated, broadcasting cannot supplant the teacher and the direct influence which he exerts upon his pupils. Its function is to second the teacher in his task and, in a way, to complete his teaching. It is justified only in so far as it constitutes a supplementary source of information, enables the pupils to listen to original instructional talks given by specialists, awakens their intellectual curiosity and conveys new ideas to them by bringing them into contact with eminent personalities. The aim of these broadcasts should be, above all, deliberately to depart from the usual routine of the school lesson and to introduce novel features. This method of teaching should therefore be resorted to

only for certain subjects and only in so far as the school teacher is unable to handle these with the means at his disposal; in isolated country schools particularly. By bringing teachers and pupils out of their isolation in this way, school broadcasts make it possible to introduce greater variety in the curriculum of these schools and act as a stimulus both to the teacher's methods of instruction and to the work of the pupils.

An examination of the subjects which best lend themselves to this form of education will enable us to define its potentialities and advantages.

SUBJECTS BEST SUITED TO THESE BROADCASTS

Although the somewhat too limited and, at times, superficial experiments so far carried out do not yet make it possible to establish any definitely valid classification of these subjects or to determine their relative value, it is nevertheless agreed that broadcasting can be put to the best use in the following branches of school curricula: *music, literature (national and foreign); the teaching of modern languages (national and foreign); history and geography; the history of art; natural sciences and hygiene; elementary anatomy and physiology; ethics and citizenship; technical and vocational guidance.* To these may be added — outside the field of teaching properly so called — eye-witness accounts and running commentaries on important current events.

As pointed out by the experts, the educational value of these broadcasts depends partly on their method of presentation. It would therefore be advisable first to give a general survey of the methods recommended. We will then examine, for each of these subjects, the possibilities offered by broadcasting and the methods of presentation specially suited to each.

METHODS OF PRESENTATION

Broadcasting is purely auditory and, if due care is not exercised, it may easily become a cause of fatigue and inattention when used as an instrument of teaching. It lacks the visual impressions required to hold the attention

of pupils. If attention is to be held, it is imperative that other means be employed to impress the mind of classroom pupils. An endeavour should therefore be made to present a subject vividly and in the form of « word-pictures ». Instead of delivering a lecture on men and things in general, the aim should be, whenever possible, to bring them into relation with reality ; facts and ideas should be used and referred to in striking language so that the pupils are, as it were, placed in direct contact with the speaker. Care must be taken, however, — and the experts also called special attention to this point — not to make these broadcasts too sensational. Over-excitement of the pupils' imagination results in a state of mental tension that disturbs the normal functioning of their faculties. Instead of awakening ideas, they are given but fleeting and superficial impressions.

It was on the basis of this principle that the experts judged the value of the different methods of presentation. These methods may take either of the following forms :

The ordinary Lesson. — This method, which is intended to reproduce the contact established between teacher and pupils in normal classroom work, is necessarily of an artificial character and is, moreover, suitable only for a very limited number of subjects. The broadcaster asks questions and indicates certain exercises to be done by the pupils. The pupils answer aloud either individually or collectively under the supervision of the teacher. The lecturer may also ask the class to repeat words, phrases, etc. The method is suited particularly to broadcasts on speech and for the teaching of foreign languages. Few broadcast teachers, however, possess the degree of training required to make this method a success. It is not sufficient for them to be experts in child psychology, they must also have enough imagination to picture themselves addressing a full classroom.

To overcome this drawback experimental broadcasts have been organised in which the lecturer addresses a group of pupils in the studio ; he is thus confronted with a living audience and is induced to make his talk a real lesson. This method, known as the « model lessons » method, can never amount to anything more than an imitation of the classroom and, in general, the experts did not regard it as one to be recommended.

Lectures. — This method is more specially suited to educational broadcasts intended for adult listeners. Among school children, it very easily engenders boredom, fatigue and passivity. Lectures should therefore be few in number and listened to only by the senior pupils of the school. They should be timed to last about 15 minutes, 25 minutes being considered as a maximum. Certain subjects will be found for which this method of presentation is necessary and offers no difficulties : for example, eye-witness accounts, travel talks, etc. To make the lecture more vivid, it may also be presented in dramatised form, in the teaching of history, for instance. On the other hand, lectures have an educational value peculiar to them : they teach the pupils to grasp the main points of a subject, to draw up a synthesis, thus furnishing them with one of the most useful exercises in mind training. For the lecture to be really effective, the subject must mesh in with the school syllabus ; the teacher must prepare his pupils and the broadcasts must be followed by an open discussion in which the pupils are invited by their teacher to retrace the lecturer's remarks in outline, to extract the salient features and to judge of their significance. During the lecture, therefore, the class may take a few notes ; this method should not be overdone, however, as the pupils are apt to lose the thread of the broadcaster's remarks. They should confine themselves to noting a few essential points that will enable them to recall the outstanding ideas.

With regard to the lecturer, he should speak slowly and distinctly, using simple phrases that can be understood by the large majority of his listeners. It too frequently happens that the lecturer, if he is also a teacher, has in mind only the pupils of his own school who are familiar with his voice and favourite expressions. He is apt to think that, when broadcasting he will be understood by all his listeners if he speaks in exactly the same manner as that which he adopts before his own pupils. The lecturer must, above all, place himself on the same intellectual level as his audience. It is generally agreed that a lecture which is well understood by the average pupil, even if it falls below the standard of comprehension that might justly be expected of him, gives better results than a lecture on too academic a subject.

Talks, or simple expositions. — These are straight forward talks in which an expert deals with a subject in which he excels. This method of presentation, which is less rigid and formal than a lecture, is suited to a large number of subjects. It is particularly suited for history lessons, but it may also be usefully adopted for lessons in geography, literature and, in a certain measure, for the sciences. When the subject lends itself to such additions, the talks may be supplemented by songs or music, recitations of passages of verse or prose, etc.

Dialogue. — If it is true that, when transmitted through the microphone, ideas and facts should be presented as vividly as possible, the dialogue, which consists in a conversation between two or more persons, constitutes an excellent method of presentation, provided, however, that the dialogue is not merely a series of questions and answers.

The dialogue may take the form of a *didactic debate*. For example, a scholar or scientist may be invited to speak on a subject in which he is eminently qualified. The interlocutor will then represent the listeners and he must see that the debate does not exceed the standard of comprehension of the pupils ; *if necessary, he must bring the expert down to that standard by asking for explanations, asking questions, etc.* The interlocutor, therefore, if he is to play his part with success, must be fairly well informed on the subject under discussion in order that the conversation may not unnecessarily depart from the pre-conceived track. He should also be thoroughly acquainted with the mentality of the pupils and conversant with the methods of teaching most suited to their psychology. This form of dialogue is eminently suited to the teaching of modern languages.

Dialogues may also take the form of an exchange of views, in which each of the interlocutors contributes his share in throwing light on new aspects of the question and in analysing the subject in greater detail ; this method has been used with marked success in broadcast history lessons.

In dialogues which are in the nature of *debates*, the different points of view should be set forth ; truth should be made to appear from this very conflict of views. This argumentative form of discussion, however, with its exposition of *pros and cons* gives rise to a certain tension of mind ; it should be adopted preferably for subjects of general interest that have no direct connection with classroom

subjects, when it is wished either to furnish the pupils with an objective survey of the major problems of everyday life, or to supply material for subsequent discussions, as is done in the Anglo-Saxon countries.

Teachers who have organised discussions between groups of their pupils know how difficult it is for the latter to find suitable subjects for debate. Furthermore, they have little opportunity of hearing good model speeches. To meet this need, the British Broadcasting Corporation recently organised a series of « unfinished debates ». A speaker opens from the studio and states his views on a given question, after which another replies. The broadcast is then suspended and the pupils are left to continue the discussion or to make any other use they wish of what they have heard. These debates may be used with advantage in training pupils to study the style or argumentation of the speakers, to analyse the weight of their arguments, etc. As a rule, teachers prefer to use these broadcasts as introductions to discussions that are taken up by their pupils. To be of a real value these debates have to be carried on under the guidance of group leaders especially trained for this purpose. Those introductory discussions are more particularly suited to secondary school pupils.

Dramatisation. — This method is, in fact, merely a more complete application of the general principle which, in the unanimous opinion of the experts, should govern the different methods of presentation, namely : the subject should be presented impressively and vividly, in a manner that appeals to the imagination of the listener and arouses his creative activity. The method consists essentially in evoking, in picturesque language, certain episodes, either by making them the background for a central theme, which gives, in a way, the radio-drama, or by evoking in freer fashion a succession of scenes relating to one and the same subject. In these broadcasts, it is of paramount importance that the pupils should be brought into direct touch with the subject matter, thus creating the right atmosphere ; with a little imagination, they will picture themselves witnessing, or taking part in, the scenes depicted. These dramatic reconstructions of history may also be introduced in a talk, for the space of ten minutes say, by way of illustration.

Closely related as they are to the radio-drama, to a point

in fact that they may at times appear identical, these dramatisations distinguish themselves by their object, which is above all didactic. This form of presentation — and we shall have occasion to refer to it later — is particularly useful as a means of illustrating history lessons. It may also serve to illustrate certain geography lessons; for example, the broadcast may reconstruct an expedition to the North Pole, imaginary explorers being invited to take part. It has also been found that the sciences lend themselves to this method of scenic description more than is generally thought. Pupils can, for example, listen in to the discovery of X-rays by Roentgen, to the major manifestations of Nature, etc.

Story. — This method, which is particularly adapted to the psychology of children, is always highly successful, whether the subject derives from fiction or from fact, or whether the broadcast consists of anecdotes on the lives of famous men. When stories based on legends and folklore are being told, care should be taken to preserve the original poetic and naïve expressions. In a short introductory address, the announcer should endeavour to acquaint listeners with the subject of the talk and thus transport them in thought to the scene of action.

Educational running Commentaries. — This method, which differs from the usual commentary or eye-witness account in that it not only provides pupils with entertainment but also tends to give them a vivid lesson with the aid of means which are not available to the school teacher, constitutes a first-rate intellectual stimulant, especially in the case of isolated rural schools. It makes it possible to bring the pupils into immediate contact with current events, to follow the various developments in the economic, social and political life of the present day world. The rôle of the commentator consists in keeping constantly on the alert, ready to transmit his impressions in picturesque and colourful language, in short to portray in words the scene which he is witnessing. Some of the experts have no hesitation in placing these broadcasts first in the list of methods of presentation. This is particularly true when we consider not so much the method itself as the principle underlying it.

SUBJECT MATTER AND POTENTIALITIES OF THIS MEDIUM OF EDUCATION

Having thus defined the methods which can be adopted, we can now turn to the question of their application, examining them concurrently with a more detailed study of each of the subjects that can be chosen for these school broadcasts. Strictly speaking, school broadcasting is not a means of instruction proper : its supplemental rôle does not consist in completing, by a new mode of teaching, the elements of knowledge acquired in the classroom, but rather in illustrating that instruction and in enriching it by opening up new horizons in such a way that the intellectual curiosity of the pupils is aroused. This also explains the preference shown by the experts for those methods of presentation which forcibly impress the imagination. Such are the principles which emerge from the considerations put forward by the experts regarding the different subjects, which now remain to be examined separately.

Music.—The primary aim of these lessons should be to train the musical sense of the pupils by teaching them how to appreciate the works of great composers ; to develop their taste for and practice of melody and rhythm by presenting them as the natural expression of human feelings, thus completing the tuition given by the school music teacher. Certain experts consider that these broadcast lessons may also be used to teach pupils to read a simple melody, to compose elementary tunes and to acquire practice in group singing. These singing exercises are very popular in Great Britain.

In these courses of musical training, an endeavour should be made to include in each of the concerts or recitals, examples of the simplest classical works. For these to be fully grasped by the pupils, it will be necessary to repeat them several times. The school teacher should therefore provide himself with records of the chief passages of these works and play them before and after the broadcast. Each of the performers in the studio orchestra should be made to play his instrument in turn in order that the listeners may realise the part it plays in the score. Each concert, to give good results, should be accompanied by a commen-

tary given in the form of an informal talk. To render a given work more comprehensible, the pupils should be told something about the composer's life, the ideal at which he aimed, and, in so far as possible, the manner in which he interpreted human feelings.

These musical broadcasts accompanied by comments will naturally vary in character according to the class of pupils for which they are designed. It is also indispensable that the listeners should have the written music before them for reference. Pamphlets should therefore be published in advance and distributed to the class, giving the words of songs and even certain passages of the music to be played, notes on the object and scope of each lesson, a list of the records to be provided and illustrations of the various instruments in the orchestra, with an indication of their respective rôles, etc.

Some of the broadcasts might also be devoted to the singing of songs and the playing of short pieces of music composed by the pupils themselves during the year. Broadcasts of this kind might be given as the final lesson of the series for that year.

National and foreign Literature. — The supplemental rôle of broadcasting will here consist in allowing scholars to give an outline sketch of the evolution of a literary style, to analyse its principal examples, to call attention to the beauty of certain masterpieces and to trace their influence on national and foreign literature. Far from supplanting ordinary classroom work, these syntheses should serve to illustrate and complete it.

Thanks to wireless broadcasting, it is also possible to hear certain passages from the works of great masters rendered by first-rate artistes. In choosing these passages, preference should be given to scenes in which only a small number of characters figure. It has been found that after these partial revelations of works by judiciously selected excerpts, pupils read the entire work. So, instead of acting as a deterrent to reading, these broadcasts are an incentive. Here also, with systematically planned programmes, announced well in advance, the broadcasting of properly selected works recited by competent artistes will advantageously illustrate the literature lessons given in the classroom.

Another method, which has proved very popular, is to

arrange for a literary critic to deliver a series of talks on certain books and to stress the reasons why they should be admired. The critic should avoid conveying the impression that there is any idea of compulsion as regards the reading of these books. Lists of the works analysed in the course of these talks, with the names of the publishers and the price of popular editions should be handed to the pupils. These lists might also be communicated beforehand to the local libraries so that they may obtain copies of the books recommended or place them at the disposal of the schools.

It will be realised that these talks are specially suitable for secondary school children. When addressed to the senior classes, they might be delivered in the form of a lecture. They should be given in logical order and announced well in advance, so that the teachers may make a selection according to the literary ability of their pupils. The pamphlets announcing the subject matter should contain a brief analysis of each of the talks, with the text of the passages to be broadcast.

Some of the experts are of the opinion that these broadcasts might be used to teach pupils to express their ideas in writing. The setting of essays on abstract subjects should be avoided (theses on progress, etc. or imaginary dialogues between characters of classic drama). They should rather be taught to describe what they have actually seen, scenes of every day life, and to write on concrete subjects with which they are familiar. These lessons in composition and style as an expression of personality require constant collaboration between teacher and pupils. The latter are asked by the broadcast lecturer to write an essay on a given subject. The essays are then read and criticised by the teacher in the classroom. The lecturer, for his part, follows the work done each week by a certain class, whose papers he corrects himself. In this way, he is able to call attention to the more common examples of faulty composition, to correct them and to indicate the qualities of essays of special merit. This method enables the broadcaster to win the confidence of his listeners and even to exercise a certain measure of authority over them. After selecting a few papers forwarded to him from other schools, he criticises these also, giving the name of the school or even the names of the pupils which have submitted the best, thus keeping up a spirit of healthy competition among his listeners. From time to time, prizes may be awarded for the best efforts.

Modern Languages. — These broadcasts should consist of exercises in conversation whereby the pupils may augment their vocabulary and, by listening to lively conversations held in the studio, to learn the construction of phrases, pronunciation and rhythm — knowledge which they sometimes acquire with much difficulty when obliged to rely on dictionaries and text-books. The experts take generally the view that grammar and syntax should be approached in these broadcast lessons with considerable caution. These subjects should rather be left to the normal classroom routine as they require concentration and uninterrupted attention and a form of teaching in which the children's imagination plays no part.

For primary schools, the practical courses should preferably consist of lessons in the mother tongue of the pupils. They should be used for the broadcasting of models of expressive speech and good pronunciation, to teach the pupils to express themselves correctly and to rid themselves of faulty pronunciation which they may have inherited from local dialect or custom. In the course of these lessons, the broadcaster may also explain a few principles regarding the formation of sounds and speech, with practical demonstrations. The teacher who realises the defects of local pronunciation should make a point of applying this practical form of instruction to the special needs of his pupils. He should provide himself with the pamphlets giving the different subjects of these lessons and the exercises to be done by the pupils during the week.

It is in the secondary schools that broadcasting as a means of teaching foreign languages is found to be particularly useful. The lessons, which are given by foreign instructors familiar with the mentality of the pupils of the country, should be given entirely in the foreign language so that the children may grow accustomed to the sounds and pronunciation peculiar to that language. Translations, it has been found, retard this ear training.

Beginners' courses should consist of lessons in pronunciation, a reading followed by explanations, conversation alternating with a reading or recitation. The subject of the talk should be that of the reading in order that the pupils may dispense with a text and concentrate on listening. The vocabulary and expressions used in the conversations between foreign instructors should be of the simplest

character ; the conversations should introduce short anecdotes, proverbs and common phrases adapted to the description of scenes of daily life.

The text of the readings, songs and poems, and the subject of the lessons should be distributed beforehand to enable the teachers to prepare their pupils. The latter should be induced to take an active part in the lessons. The instructor speaking to them from the studio should, from time to time, ask them to repeat certain words and simple sentences and to join in the singing. The classroom teacher should write the more difficult words on the blackboard as and when they occur in the broadcast.

The broadcasting of talks in a foreign language is valuable only to pupils who are already fairly conversant with that language ; it is of little use for others, for immediately they hear a word they do not understand the effort made to grasp its meaning causes them to miss what follows, with the result that the broadcaster seems to be speaking too rapidly for them.

In order that these lessons may not prove too great a strain, it is a good plan to introduce, by way of relaxation, an interlude of group singing, the songs being chosen from among the folk songs of the country whose language is being studied.

Readings and conversations between foreign instructors are better suited to advanced pupils. The subject of these talks may be the customs and the social life of the country whose language is being taught, also the main features of its civilisation, its literature, art, etc. The pupils will thus not only have an opportunity of hearing the living and spontaneous speech of a given nation, they will also grow accustomed to hearing it spoken by qualified representatives of the country.

To ensure the success of these talks, an educator belonging to the same country as the pupils may also be invited to take part. The rôle of this expert should be to keep the level of the talk within the range of the listeners. The conversation may even be in the form of a dialogue between the foreign instructor and the expert. When he deems it necessary, the latter should ask the lecturer certain questions suggested to him by the difficulties probably experienced by the pupils. Listeners then have the impression that they are taking part in the conversation. Further,

this educational expert should be the pedagogical adviser ; he should assist the foreign instructor to choose his subjects, collaborate with him in the preparation of the pamphlet, etc. We have here a practical example of bi-national co-operation between educators that is of the highest importance.

The booklet containing a summary of the conversations and a glossary of the more difficult words and expressions should be distributed to the pupils in advance. These notes should be used exclusively for the preparation of the class and should not be referred to during the broadcast. When listening to readings, the recitation of poetry, etc. the pupils may have the text before them.

Another equally effective method is to organise, as a conclusion to the broadcast, a recital of one of the works of a master composer of the country whose language is being studied, or, as an alternative, a conversation on that subject. The vividness of the impressions produced by the musical rendering will impart such spontaneity to the conversation that ideas will, as it were, burst forth automatically and the conversation will appear to be quite *impromptu*. This form of presentation will strike the listeners as being more human and more natural than a dialogue, which, if not carefully planned, will very easily give the pupils the impression that they are listening to an artificial and inert conversation.

The Use of Broadcasting and Gramophone Records. — These considerations furnish us with an opportunity of defining the rôle of gramophone records and broadcasting in this form of education. Certain teachers of modern languages are of the opinion that records are more suitable for these practical lessons.

The record has certain indisputable advantages : it can be used at any time ; a programme can be planned to suit the needs of the moment ; certain texts can be repeated as often as desired and heard without the slightest variation. On the other hand, the use of records compels the pupils to listen continually to the same works, reproduced mechanically and, in a way, lifelessly. When a repertory has to be renewed, records cost far more in the long run than wireless.

Broadcasting, on the contrary, makes it far more possible to give listeners the impression that they are hearing a living

and natural conversation, expressing, as it were, the very trend of thought. They *feel* that the broadcasters are speaking to them *individually*. Moreover, broadcasting alone can provide pupils with talks on the customs and peculiarities of the different peoples and teach them both their language and their civilisation.

In reality, broadcasting and records supplement one another in the teaching of languages. Records are used more for phonetic exercises on texts prepared *ad hoc* and for model recitations ; wireless gives pupils an opportunity of hearing spontaneous and living speech and the manner in which a nation expresses its thoughts. This conclusion is confirmed by the investigations carried out by the International Broadcasting Union. It is now even possible to combine the advantages of the gramophone and of the radio-electric receiver in one instrument : the radiogramophone.

National and World History. — Here, as in the other branches of wireless instruction, the aim is not to teach in the strict sense of the expression or to supplant the lessons given by the classroom teacher, but to illustrate these lessons by creating the atmosphere in which historical events occurred ; to enable highly qualified historians to present synthetic sketches and to give the pupils a general survey of the evolution and linking up of ideas and facts from which modern civilisation emerged. The experts were careful to point out that these historical sketches and reconstructions presuppose that the pupils have already a very fair knowledge of history ; the classroom lessons help them to place these historical dramatisations in their proper sequence, while the broadcasts serve to illustrate the history lessons as given by the teacher.

In these talks, which may last about 20 minutes, the lecturer, in retracing the outstanding events in history, should present his ideas suggestively in a manner to stimulate imagination. If he were content to make a simple didactic exposition of his subject, the results would be far less satisfactory than those obtained by the school teacher.

Several experts are of the opinion that it is chiefly for these evocations and reconstructions of historical events that the dramatised form of presentation should be employed. A certain ingenuity should therefore be exercised in grouping the elements of the subject around a charac-

teristic incident, to introduce certain characters incarnating, as it were, the movement of ideas and events of a period, thereby emphasising the principles in the portrayal of concrete actions and facts. In doing this, historical details should not be laboured, neither should any attempt be made to present a rigorously faithful reconstruction of a scene in history but rather to adapt it to the degree of knowledge and intellectual development of the pupils. For example, these dramatisations may have as their subject : the life of a schoolboy in the middle ages ; an Olympian festival ; an election scene in ancient Rome, etc., care being taken to place the action in a suggestive and concrete setting ; a barber's shop in Rome where pupils would hear a conversation between one of Cicero's partisans and one of Catilina's confederates ; a school attached to a bishop's palace, in a cathedral close, etc. For the lessons in local history, the personalities to whom statues have been erected in the town may be brought back to life. If well devised and presented, these historical scenes can render the life of past centuries so familiar to the pupils that, in their imagination, they will draw comparisons with their own life of to-day, a mental exercise that is invaluable for fixing these data in their memory.

Several experts observed that these reconstructions of history may at times appear somewhat artificial ; in any case, they require a good measure of imagination. Although currently adopted in the Germanic and Anglo-Saxon countries, they do not seem to have met with any great favour in Latin countries. The latter generally prefer to present historical events in anecdote form illustrating the lives of famous men, or the economic, social and political situation of a period.

Whatever be the case, these synthetic expositions, reconstructions or didactic dramatisations are particularly well suited to pupils of secondary schools or to those in the corresponding classes of the higher primary schools.

Geography. — In this field also, broadcasting cannot claim to play anything more than a supplementary rôle. It will be sufficient to recall the experiment made in this connection in Great Britain. At the outset, an attempt was made to give, in addition to travel talks, a series of lectures comprising geography lessons proper. It was, however, soon realised that lessons of this kind were undesirable as

nobody was better qualified to give them than the school teacher himself. It was therefore decided to confine the broadcasts to *travel talks*.

Under this head, school broadcasting can render invaluable, not to say unique services. It enables children to hear the voice of travellers who have actually experienced what they are relating and, consequently, to be brought into touch with facts and new lights very different from the information to be obtained from the ordinary text-book. For example, an explorer can be invited to speak on his own discoveries, or a pioneer adventurer on his life in the jungle. Broadcasters dealing with such subjects as the customs and habits of the different peoples of the world should be persons who have had personal experience of life among those peoples. Talks planned on these lines will make geography an exceedingly attractive subject.

Some of these talks may even be given in conjunction with the current geography lessons figuring in the school syllabus. They should, however, be regarded more often as « extras ». A travel talk can never introduce more than a few aspects of a geography lesson — those which stimulate imagination, whereby it is possible to retain a lasting imprint of the knowledge acquired.

These talks may be divided into two classes : the *travel talk*, very simple in statement and easily understood by children of from 12 to 13 years of age. The lecturer should refer to maps and pictures exhibited in the classroom, in order to localise his subject and to train his listeners to visualise concrete facts. Different opinions are held as to the advisability of requiring the pupils to take notes. The organisers of these talks do not recommend this practice ; they take the view that if the lecturer is really interesting and able to hold his listeners, note-taking will not even enter the pupils' mind. To compel them to do so would result in their losing the thread of the story.

Talks may also be given on the physical, economic, political and social conditions of the different peoples. These broadcasts, given by persons possessing expert knowledge of the countries they are describing and in which they have spent an appreciable part of their lives are very similar in character to lectures given before geographical societies and are more suited to the needs of pupils in secondary schools.

Science. — It is generally agreed that broadcasting

cannot be used for the teaching of those sciences the study of which call for a considerable activity of the senses other than that of hearing : demonstrations on the blackboard, laboratory experiments and research, etc. Broadcasting can, on the other hand, serve a useful purpose for transmitting talks by scientists of note on scientific questions of general scope and interest ; outline biographies of the life and work of famous scientists, with readings of characteristic passages from their books ; the story of great discoveries in the world of science, inventions, etc. These talks should as far as possible be given in dramatised form so that they may have more imaginative appeal.

For pupils attending primary schools and the higher primary schools, arrangements should be made to broadcast talks explaining certain scientific principles that can be applied in practice. These talks might be given in connection with the following subjects :

Nature Study. — The aim of these talks should be to encourage children to take a personal interest in the natural phenomena which they may observe in the parks, woods, or fields.

Biology and Hygiene. — These talks, planned for the senior pupils of primary schools and for pupils of higher primary schools, also have as their object the initiation of children to the elementary principles of biology and physiology. The language used should be as simple as possible compatible with scientific accuracy and a list of the technical words, with a glossary, should be provided for each talk. The teacher is advised to read through this list with his pupils before the lesson. The corresponding pamphlets should also contain diagrams and simple anatomical charts, with suggestions for easy experiments and demonstrations that can be carried out by the pupils themselves with the means at their disposal. In this connection, they should also be furnished with instructions for making the requisite apparatus.

Agriculture and Horticulture. — The purpose of these broadcasts, intended more particularly for pupils in the rural areas, is to initiate them to, and to stimulate their interest in, country life. The lectures deal, for example, with flower-growing, fruit-trees, bird and plant life, etc., the practical application or certain scientific data in the

running of a farm. These talks should be principally of a local character and carefully planned to take into account, the climate, land and agriculture peculiar to each district.

For the senior classes of the *secondary schools*, talks having as their object the popularisation and general trend of modern science in its different branches may also be arranged. The pupils are given a sweeping survey of the movements taking place in the scientific world, thus warning them of the dangers of over-specialised and one-sided training. They are also given an opportunity of forming their own ideas regarding the different scientific careers open to them and to choose one in which they feel the best qualified. Talks of this kind should be organised for the benefit of the higher primary and technical schools. In this field also, broadcasting will be found to be extremely useful, whether it be considered from the point of view of vocational guidance or as an aid to professional training.

Outside Broadcasts and running Commentaries. — These broadcasts should not aim at teaching in the strict sense of the word or at expanding the pupils' mind with a view to the acquisition of fresh knowledge; their chief object should be rather to stimulate a desire for self-instruction and to induce children to visualise the happenings of every day life, to ask questions and to raise rather than to solve problems — in short, to arouse their intellectual curiosity. The broadcaster may, for example, speak from a factory, a bank or an artist's studio and describe the work there being done. The educational value of these broadcasts is, however, open to question. The lecturer in fact finds himself in the midst of objects and processes which are difficult to explain with sufficient vividness, as the majority of the listeners have never seen them and, in many cases, have not the vaguest idea of their meaning.

Broadcast commentaries which bring listeners into contact with events in which they cannot personally take part, have been found specially useful for the rural schools. Teachers and pupils find in these talks a link with the outside world and are thus saved from the contraction of their intellectual horizon which threatens them in their isolation.

These broadcasts should deal with important current events both national and international : official ceremonies,

the opening of exhibitions, the inauguration of public services, the launching of a ship, etc. Some of the experts lay more stress on the educational value of these commentaries. This kind of broadcast might also be used to initiate pupils to the economic, social and artistic life of their country.

INCORPORATION OF BROADCAST PROGRAMMES IN THE GENERAL FRAMEWORK OF CLASSROOM COURSES

The foregoing considerations, which have enabled us to define the rôle of school broadcasting and to judge of the nature of the services that can rightly be expected of it, necessarily leads us to the question of its adaptation to school *curricula* and normal classroom work, to which it is merely a supplementary instrument of teaching.

With broadcasting, it is not a matter of imposing a programme of lessons on a whole class of pupils as in the case of school teaching, but of furnishing them with an opportunity of following certain judiciously chosen wireless courses. The subject matter of these broadcast lessons is, of course, carefully determined beforehand in co-operation with the school authorities, but the teacher is left to choose, from among these programmes, the subjects which in his opinion are best suited to his pupils.

This selection is imperative for several reasons. The talks should correspond to the tuition already received by the pupils and should represent the starting point of future work. Moreover, pupils take a serious interest in these talks only when they are given at fairly rare intervals ; if too frequently broadcast they inevitably result in lack of concentration and are conducive to superficial habits of working.

In order that the school teacher may make a proper choice of his subjects, he should be provided well in advance with the programme of the wireless lessons, accompanied by a brief summary of the nature of each, the object which it is desired to attain and the grade of pupils for whom they have been more specially designed ; the teachers then base their choice on the possibilities offered in their own time-tables. Since experience has shown that the results obtained by these broadcasts do not depend

entirely on the actual value of the programmes but also on the aptitude of the pupils, the teacher should, in so far as possible, invite his pupils to collaborate with him in making his choice.

Serial and separate Broadcast Lessons.

This question of the adaptation and choice of subjects is partly contingent upon the order in which they are presented. Some of the experts consider that talks on one subject should be linked up one with the other so as to form a methodical and continuous course, planned in harmony with the programme of studies. Others — and these represent the majority — think that this rigid sequence should be avoided as it obliges the pupils to listen to every talk in a series if they are to derive any real benefit from them. This methodical order of presentation is more suitable for adult education. This opinion is confirmed, in particular, by the results of the enquiry conducted by the International Broadcasting Union.

While making no attempt to settle this question of principle, it is pointed out that although there may be certain subjects — history, for instance — for which it would appear necessary to have the lessons logically linked up together, each of the talks may nevertheless be prepared in such a way that it forms a whole in itself and allows the school teacher to make his selection accordingly.

Hours and Duration of Broadcasts.

It is generally agreed that, if they are to be really effective, these talks must be short and relatively few in number. The duration of the broadcast will necessarily vary according to the subject matter, but it should never exceed thirty minutes. Experience has shown that, beyond that period, the pupils get fatigued and inattentive.

As regards the most convenient hours, the experts observe that for the primary schools, where a large number of the pupils are grouped together in one class, it should be comparatively easy for the teacher to select his broadcast items without having to make any substantial change in his time-table. Circumstances are different, however, for the secondary schools where a larger number of classes are

taken by specialised instructors. However this may be, in general, the schools prefer the broadcasts to take place at the end of the morning session or at the end of the day.

The report communicated to us by the International Broadcasting Union shows that this is in fact the practice in the majority of countries.

Choice and Training of Broadcast Lecturers.

The lecturers engaged for these school broadcasts should be educators conversant with the technique of wireless and accustomed to this kind of lecture. They should also have listened to broadcast lessons given by other lecturers. The first talk in a series might, for example, be recorded and then broadcast by way of experiment ; the lecturer would then have an opportunity of hearing his own lesson, of judging of the effect produced on the pupils and of adjusting future lessons accordingly.

The question which here arises is : should these lectures be given by professional educators or by experts who are masters of their subject ? Opinions are divided on this point. Nobody denies that the lecturer should be familiar with teaching methods and with child psychology. On the other hand, as already stated, there are certain subjects which can be dealt with only by an expert : travel talks, for example, in which the broadcaster must relate his actual experiences and communicate to his listeners something more than mere book knowledge. For other talks, some authorities think it wiser to engage the services of lecturers who have been members of the teaching profession. This opinion, which was expressed by certain members of the International Federation of Teachers' Associations, concerns, more particularly, talks intended for primary school pupils.

Without wishing to exclude teachers, the majority of the experts point out that, when broadcasting, they are rather too inclined to deliver their talk in the form of a classroom lesson. Consequently, preference should, in principle, be given to broadcasters who are specialists in their particular subject. The lecturer who knows how to thrill his listeners and impart his enthusiasm to them will be far more popular than a scholar who speaks with meticulous accuracy and method.

Collaboration between Lecturer and School Teacher.

In order that these talks may give good results, the lecturer and teacher must fully understand that the broadcast lesson is essentially a joint task requiring their closest and constant co-operation. It is also through the intermediary of the school teacher that the broadcaster keeps in touch with his listeners since he can scarcely be expected to meet them personally.

This collaboration should come into play more particularly in connection with the preparation of the pupils. Needless to say, this does not mean that the subject of the talk should be explained in detail ; such explanation would make the broadcast superfluous, and, moreover, the teacher has no time to do so. Above all, care must be taken to prevent the subject of the talk from entering the pupil's mind as a foreign body finds its way into a living organism. The aim of preparation, therefore, should be to put the pupils in the right frame of mind to receive the broadcast. The teacher should provide himself with the necessary maps, illustrations, diagrams and films with which to supplement *de visu* the purely auditory and, to that extent, inadequate mode of presentation. To facilitate the teacher's task in this respect, the pamphlets should contain all the necessary information : nature of the talk, its object, the class of pupil for whom it is intended, suggestions for its preparation, etc.

During the lesson, the teacher should second the efforts of the lecturer by encouraging his pupils to answer the questions asked by the broadcaster, to take part in the songs, to repeat certain words and phrases. He should lead them and set the example, writing difficult words and even certain sentences on the blackboard. If the talk requires it, he should follow it on a map, exhibit pictures, slides, etc. Films illustrating some of the talks should be sent to those schools which have a cinematograph apparatus. The lecturer should himself give the signal for the removal of the slides and the showing of the films. It will be seen, therefore, that far from allowing the teacher to remain inactive during the lesson, these broadcasts on the contrary call for an extremely varied and sustained activity on his part.

Whether the pupils should be asked by the lecturer and teacher to take notes is a debatable point. In some quar-

ters, note-taking is warmly recommended on the ground that the pupils are thereby induced to take an active part in the lesson. For this purpose, the pupils should be given two sheets of paper, one for jotting down difficult words, the other for the main ideas advanced during the talk. The teacher himself should train his pupils in the art of taking notes by writing certain words and ideas on the black-board and, after the broadcast, by stating his reasons which led him to do so. We have, however, already mentioned that the majority of the experts are of the opinion that note-taking is apt to make the pupils lose the thread of the talk and to focus their attention on points of only secondary importance. In practice, therefore, pupils should be required to take notes only on exceptional occasions.

Use to be made of Broadcast Lessons.

After the broadcast the teacher will naturally be obliged to give his pupils a few supplementary explanations, to revise what they have heard, emphasise the characteristic points, answer the questions asked by the lecturer, etc. Whatever use he may wish to make of the talks the teacher should in all cases re-state the outstanding ideas advanced during the broadcast. This revision is of vital importance.

The pamphlets issued for the teacher's guidance should give the replies to the questions asked by the lecturer, suggestions as to the use to be made of the broadcast, the practical experiments and exercises to be done by the pupils, etc. These pamphlets and illustrated supplements should be of such a form that the teachers may easily detach the parts relating to one and the same subject and thus build up their documentation. Lastly — and this is not the least important of the results that one may reasonably expect from this collaboration — the school teachers should not hesitate to communicate their observations to the broadcaster. Who is indeed better qualified than the teacher to estimate the value of the broadcasts? These criticisms may be submitted in personal correspondence, on special study days organised with the help of the local school authorities or at conferences organised under the auspices of the permanent research committees.

Verification of Results. — Methodical Investigations.

The experts unanimously recognised that, provided it was not allowed to become more than a supplementary instrument of teaching, wireless broadcasting had definitely established itself in the educational system of primary and secondary schools. Indeed, it enables the pupils to hear talks of a novel and original character, given by specialists ; it awakens and stimulates their intellectual curiosity ; gives them new outlooks and, in a way, puts life into the schoolmaster's teaching and into the work done by the pupils. The considerations set forth in the preceding pages make it unnecessary to dwell any longer on this conclusion.

In order to ascertain and verify the results obtained from these school broadcasts, official and private enquiries can be undertaken among the educational authorities and among the teachers of the schools who have followed them. The sending out of questionnaires is specially useful when their purpose is merely to collect facts. The same cannot be said when it is a matter of interpreting these facts and deducing the appropriate conclusions. The system of test papers may also be adopted : the broadcaster dictates a number of questions to the listeners, who are required to write down their answers immediately. The papers are then forwarded to the studio. There is here no intention of organising a competition, in fact such a conception should be carefully excluded ; the purpose of these tests is to enable the investigator to obtain replies which he can compare with those received on identical points from classes of pupils who have not taken the broadcast. The elements of control so collected will be no less fragmentary, the replies sometimes too hastily given and, in consequence, too superficial.

In these conditions, it would be impossible to lay too great a stress on the need for establishing study and investigation centres on the lines of those to be found, for example, in Great Britain and Germany ; these centres would be entrusted with the drawing up of programmes, would assure their preparation, publish pamphlets and act as a link between the broadcasting organisations and the school departments. It is only by the organisation of such centres, which would bring together, in a series of working

meetings, experts for each section of the programmes, representatives of the teachers of the schools using the broadcasts and delegates of the broadcasting corporations, that it will be possible to centralise and exchange results of experimental work and to undertake systematic investigations, not only in the field of pedagogy but also in respect of the technique of school broadcasting. The experts therefore did not hesitate to make the establishment of such centres a condition *sine qua non* of the success of these broadcasts.

The Need for installing good Receivers.

The experts did also emphasise the importance of ensuring good reception in the schools. If school broadcasts have not always produced the beneficial results that one was entitled to expect, the explanation has frequently been found in bad conditions of reception.

These conditions which are of a technical order, are examined from a special standpoint in the report of the International Broadcasting Union, to which we would refer our readers. This report stresses the necessity for attaching technical experts specially entrusted with the study of these problems to the national school broadcasting committees. These experts would advise the local school authorities in the choice, installation, operation and upkeep of receivers. In this connection, steps should be taken with a view to the organisation of exhibitions and demonstrations of receivers specially designed to meet classroom requirements.

II

The Place of Broadcasting in Higher Education

Before we can reply in an adequate manner to the questions that arise regarding the use of broadcasting in higher education, a distinction must be made between the regular courses given by faculty professors and the special courses supplementary to the former, on one hand, and popular courses or university extension courses, on the other.

The experts who examined this question are mostly of the opinion that broadcasting offers but small possibilities

for the *regular and special courses of faculties of science*. This branch of teaching requires blackboard demonstrations, laboratory experiments, etc.

For the *faculties of letters* (literature, history, history of art, etc.) and, in a certain measure, for the *faculties of law*, it is generally admitted that broadcasting may be used for the transmission of certain lectures of a nature to interest listeners with a high standard of culture. The same applies to special courses on study guidance : bibliographical information, etc., for the guidance of students in their personal studies, provided that these broadcasts be given not too frequently and limited to 30 minutes' duration.

On the other hand, it is universally agreed that valuable service can be rendered by broadcasting in connection with lectures or talks of a popular character on problems of general interest and university extension courses. The universities are even urged to collaborate more in this work of scientific popularisation, the development and expansion of which would enable them to fulfil their educational and social mission more efficiently with the aid of broadcasting.

III

The Use of Broadcasting for teaching the Aims of the League of Nations and for promoting the International Spirit

PRIMARY AND SECONDARY SCHOOLS

In this field, the principal aim should be to create, among children, a desire for understanding and international collaboration, rather than to impart to them abstract ideas directly relating to the ideals and activities of the League of Nations and the major international institutions. The experts who discussed this question in their reports are quite formal on this point.

Talks on Folklore, Music, etc.

The talks intended for pupils in the primary schools, therefore, should be on the following subjects : the history,

folklore and customs of the different peoples ; tales and legends ; excerpts from the folk music of various countries ; biographies of famous men and the great benefactors of mankind, etc. For secondary schools, these broadcasts should be extended to include comparative studies of the popular arts, literature, music, painting and the civilisation of these countries. It is even suggested that well-known folklore specialists should be invited to speak on the common foundation underlying folk legends and tales. These literary and musical broadcasts should be accompanied by commentaries on the nature of the work, its meaning and scope, and on the genius of the people with whom it is associated.

It is impossible to deny that, in this field, school broadcasting can render a very great service ; it enables pupils to hear extracts from the characteristic literary and artistic masterpieces produced by the civilisation of the different peoples, to acquaint themselves with the « heritage » that these works represent for mankind and, by bringing home to them the community of aspirations and sentiments that animated their authors, to set up a movement of international sympathy and brotherhood.

In order that the organisers of these school broadcasts may have assistance in preparing programmes representative of the different peoples, several of the experts recommend that, in each country, a competent body should be instructed to draw up a list of these folk songs and legends, with extracts from the most notable literary and musical works. These lists should indicate the records available, their price, name of the publishers and the number of the catalogue. These abstracts should also give a short analysis of the works listed, the rôle and personality of the authors and composers, the influence which they exercised in their own country and on the artistic movement of their time. The lists could be exchanged between the institutions responsible for the organisation of school broadcasts in the different countries.

Mention should here be made of the action taken in this field by the International Broadcasting Union. On the proposal of its Relays Committee, it has organised monthly « National Nights », when all the transmitters members of the Union simultaneously broadcast musical compositions and passages from the literary works characteristic

of the civilisation of the different European countries. Programmes are also exchanged between Europe and the United States through the good offices of the Columbia Broadcasting System and the National Broadcasting Company. In so far as circumstances allow, similar broadcasts might be arranged for the schools.

Another suggestion made by the experts was that in these school broadcasts of talks on the customs of the different peoples, a certain place should be reserved for the respective living conditions of school children in the different countries. By referring in this way to what most intimately concerns them, they will be given a more personal and hence more vivid idea of the solidarity that unites them. The ideal arrangement would be for the children of the different nations themselves to give renderings of certain musical compositions and to organise short radio-plays for the ears of their foreign comrades. In this connection, we may mention, by way of example, the initiative taken by the children of Welsh schools: every year on May 18th, the anniversary of the opening of the first conference at The Hague in 1899, known as « Goodwill Day », a message written by the pupils of these schools is broadcast by all the leading stations to their comrades in all parts of the world. The replies, which are increasing in number from year to year, are communicated to the thousands of Welsh school-children who subscribe to this expression of cordiality and friendship.

Teaching of the Aims of the League of Nations in Connexion with Talks on Classroom Subjects.

The experts point out that, instead of dealing *ex professo* with the aims and activities of the League of Nations, the major international institutions and current international problems, this instruction should be incorporated in the teaching of the different subjects figuring in the programmes of school broadcasts whenever the subject lends itself to such treatment. For example, in talks devoted to the teaching of foreign languages, an attempt should be made not only to teach these languages but also to initiate the pupils to the civilisation of the people speaking them. In connection with these language courses, arrangements might be made for the exchange of correspondence, the

organisation of foreign travel and the individual or collective interchange of school youth. In the talks on literature, and, more particularly, on history and geography, the pupils should be made to realise that there are certain political and economic problems that arise in every country and that it would be to the general advantage if they were studied in common with a view to universal solution.

In the first part of this analysis which refers to the subject matter of school broadcasts, we had occasion to indicate the manner in which this teaching could, in each of its branches, be directed towards the attainment of international understanding and agreement.

Commentaries on Events in World Politics.

On the occasion of national or international events, talks may also be broadcast by persons of répute on the momentous problems of world politics and the epoch-making events occurring in the international organisation of the League of Nations : anniversary of the Briand-Kellogg Pact, the Disarmament Conference, etc. To be successful and effective, these talks must be adapted to the standard of intellectual development reached by the pupils. This means that the broadcaster must appeal not only to their intelligence but also to their heart. These talks should not be too frequent and should deal with subjects likely to interest youth. The importance of this latter point cannot be exaggerated. The experts declare that, in many instances, pupils have been obliged to listen to lectures of too abstract a character and that the talks aroused no interest whatsoever.

Direct Teaching of the Aims of the League of Nations.

As stated above, the fundamental principle to be observed in the efficient instruction of youth in the aims of the League of Nations and in the steps taken to promote a spirit of understanding, is that, among children, a conscience of universal solidarity can be developed only in gradual stages, *progressing from a concrete perception to the comprehension of abstract principles*. It was chiefly with a view to instructing youth in the aims of the League of Nations and the major international institutions that

this principle was postulated by the experts. Instead of giving a systematic exposition of the organisation of these institutions, their functions and activities, broadcast lecturers should endeavour to make them appear as living realities — centres where men devote themselves to the solving of problems that are of direct interest to the very life and future of peoples. Very often, the sole result achieved by abstract expositions will be to make the League of Nations appear as a vague and remote entity, which listeners will for ever associate with the feeling of boredom caused by lectures of this kind. The pupils should therefore be given a vivid and concrete picture of all that really constitutes the League of Nations, films being used to illustrate the talk. They should be allowed to listen-in to a working session ; the persons attending should be introduced and the question under discussion briefly outlined ; it might also be possible to broadcast certain passages of speeches which have been recorded ; *in short, instead of giving a talk on the League of Nations and its work, the pupils should be made to see the League of Nations at work.*

After the talk, the school teacher should distribute copies of the progaganda pamphlets specially published for the use of schools, in order that they may study the subject further.

As pointed out by the experts, lectures of a more academic character on the major institutions and current international problems are more suitable for the senior pupils of secondary schools and university students. In their reports, therefore, they envisaged this aspect only as a subsidiary point. Lectures of this kind might be organised within the universities by the national groups of University Federations for the League of Nations and be presented in the form of separate talks or as a series of talks linked up in logical sequence.

The report submitted by the International Broadcasting Union contains a list of the talks and programmes which have been broadcast by the transmitters of the different countries with a view to promoting this spirit of understanding and international co-operation among school-children. Viewed as a whole, these broadcasts conform to the suggestions and recommendations made by our experts.



As stated by the experts, the questions raised by the use of broadcasting in schools : choice of subject matter, methods of presentation, choice and training of lecturers, adaptation of talks to school curricula, collaboration between lecturer and teacher, etc., belong to that class of problems which can be solved only by uninterrupted and methodical work.

They call for collaboration between the representatives of the local school authorities in the permanent centres of study and research set up to meet the special requirements and conditions of each country.

Without returning to the details set forth in this study, it may be concluded that educational broadcasting raises a great number of questions bearing upon self-help, organisation and international collaboration. The documentation collected and the comparisons made up to the present point to conclusions which, if communicated to the interested organisations and departments, should not fail to lead to practical and lasting results.

PART II.

**EXPERIMENTS, RESULTS AND PROJECTS
IN 25 COUNTRIES**

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EXPERIMENTS, RESULTS AND PROJECTS IN 25 COUNTRIES

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ARGENTINE *

I. — TEACHING IN GENERAL

Up to the present, school broadcasting has not been systematically organised. This question has however, received the careful consideration of the National Education Council and the scheme recently drawn up by that body is shortly to be put into operation.

The subjects provided for are, *for the primary schools* : the natural sciences and music ; *for the higher primary schools* : the natural sciences, Spanish (Castilian), history, geography, and music. Foreign languages are taught exclusively in the *secondary schools and special establishments*. Broadcasting takes place from 6 to 7 p.m.

The programmes are planned by an inspector, specially appointed for this work, under the supervision of the Inspector General.

Once a week, or once a month, headmasters are asked to forward a report to the broadcasting organisation, containing their observations on each of the lessons broadcast.

II. — TEACHING OF THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS

The Council is of the opinion that the direct teaching of the aims and activities of the League of Nations and the broadcasting of news on the outstanding events in world politics are scarcely to be recommended for primary schools. Talks on the national customs of the different peoples, song recitals, etc. are, in its view, more effective.

The National Education Council exercises a constant control over broadcast programmes to ensure that they include nothing of a nature to prejudice good international relations.

* On the basis of a report communicated by the National Education Council. This Council, which is, to a certain extent, autonomous, concerns itself with primary education. In January 1930, it was decided to erect a transmitter for the use of the Council, with a view to disseminating primary teaching in remote parts of the State and to issuing instructions to teachers in the matter of education.

AUSTRALIA *

Broadcasting for schools has so far been organised on systematic lines only in Victoria ; it is the intention of the organising authorities, however, to extend this practice to the other provinces and to take advantage of the results already obtained in the course of these experiments.

In order to permit of the undertaking of comparative studies and to ensure that the programmes, their transmission and their reception might receive all the attention they deserved, a Committee was appointed in 1931 in Victoria, composed of representatives of the school authorities, of the teaching staff and of technical experts. This Committee carries out its investigations in collaboration with the Australian Broadcasting Company. Thanks to the work accomplished by this Committee, a school broadcasting service was inaugurated in March 1931. Since that date, these broadcasts have continued without interruption throughout the school terms ; broadcasts, lasting half an hour, are given daily, with the exception of Saturdays from 3 to 3.30 p.m. The Committee hopes to publish the results of these experiments at the end of the year.

The broadcasts cover the following subjects : English literature ; talks on books to read ; practical advice on letter-writing, points to be observed in delivering a dissertation, etc. — Talks on modern literature. — French : exercises in pronunciation, the essential rules of grammar, vocabulary, dialogues on subjects connected with everyday life, dictation, recitations of poetry, explanation of texts. — Physical sciences and mathematics, elementary arithmetic, readings of the lives of famous scientists and explanations of the nature and scope of their scientific discoveries. — History : lessons in the form of historical dramatisations ; Christopher Columbus, the discovery of America, etc. — Geography : description of the fauna and flora of Australia ; her natural resources, mines ; talks on industry and trade, etc. — Music recitals : these broadcasts are accompanied by

* Based on a report communicated by Mr. STUART F. DOYLE, Chairman of the *Australian Broadcasting Company*.

commentaries designed to train and develop a taste for music among the pupils.

To assist school teachers in preparing their pupils and in order that the latter may follow these lessons with the greatest possible benefit, the Australian Broadcasting Company distributes free of charge to the schools a Bulletin specifically devoted to educational broadcasting. This Bulletin contains the texts of the recitations, a summary of the talks, with illustrations, and a guide to the exercises to be done by the pupils for the preparation or application of the lessons taken.

Although school broadcasts in the true sense of the expression have not yet been organised in the other provinces of Australia, the Australian Broadcasting Company transmits numerous talks on international affairs, health and hygiene, agriculture, foreign languages, musical programmes with descriptive commentaries, and a number of lectures organised by the university extension committees.

The A. B. C. has also organised a "Children's Hour" which provides talk of a recreational and instructive character.

In addition to these broadcasts intended specially for school-children, the Australian Broadcasting Company, working in conjunction with the above-mentioned Committee, organises evening talks (7.45 p.m.), the programme of which is extremely varied : history, chemistry, botany, physics, English, applied psychology, architecture, international affairs, etc. These talks are generally given by members of the League of Nations Unions. A series of lectures on the League of Nations was given for the first time this year by an Australian member of the League Secretariat.

AUSTRIA •

Since January 1932, the Science Section of the R. A. V. A. G., in collaboration with the Federal Ministry of Public Education, has been engaged in the organisation of experimental school broadcasts.

These broadcasts, given twice weekly from 10.20 to 10.50 a.m., are of a purely supplementary character. This means that care is taken to exclude from the programmes all subjects that can be taught by the school teachers with the means at their disposal. There is therefore no attempt at direct instruction and the broadcasts are confined to talks giving the impression of personal experiences ; such is the fundamental principle observed in the choice of subjects and the methods of presentation. From this point of view, the Austrian school broadcasts, although modelled on the system adopted in Germany, are still more supplementary in character than in this latter country.

They consist, in fact, exclusively of the transmission of musical compositions, travel talks by famous explorers, talks by eminent scientists on their discoveries and inventions, running commentaries on technical subjects, vocational guidance, etc., talks on natural phenomena, recitations, instructive games, etc. Readings in English and French are also given to enable pupils to acquire a correct pronunciation of these languages. These lessons are supplemented by dialogues, the singing of folk songs, etc., to give the children an idea of the life and customs of England and France. These broadcasts are intended for pupils aged 10 to 14. For the more advanced pupils of the higher schools, the programmes also provide for a monthly broadcast given in a foreign language.

These broadcasts are at present taken by more than a thousand schools. This figure may be regarded as highly promising considering the economic crisis through which Austria is now passing.

In addition to these programmes intended for school listeners, a "Children's Hour" has also been organised (three

* From the report by Dr. Rudolf Herz, Director of the Science Section of the *Österreichische Radio-Verkehr*.

hours per week). The weekly programme comprises musical items, very often by child performers ; a literary hour (stories, etc.) and an amusement hour. In this series, special mention should be made of the Bastelstunde (handicraft hour). These talks, which are due to the initiative of Radio-Vienna, have proved immensely popular. Taking advantage of the children's love of games, they are given technical and practical ideas simultaneously with instructions regarding their games.

An hour's broadcast known under the name of "Children playing at wireless" has also been planned. The children execute a short programme themselves, one of their number acting the part of announcer.

With a view to developing a spirit of understanding and international friendship among children, the Austrian broadcasting authorities consider it preferable to give talks on the lives of children of other nations, etc. Talks which are formally devoted to these subjects are less successful in stimulating the children's interest and are therefore of less value in promoting the international spirit.

BELGIUM *

I

The organisation of school broadcasting within the framework of the official programmes is progressing methodically under the supervision of the Ministry of Science and Fine Arts and with the collaboration of the *Institut national de Radiodiffusion*.

The Rôle of School Broadcasting.

The importance of the place occupied by wireless broadcasting is to be found in its value as a supplementary and auxiliary instrument of education. It can place at the disposal of pupils what the teacher would be unable to give them in such favourable conditions ; it broadens their intellectual horizon and expands their sphere of interest. Broadcasting, as a stimulant to the imagination, can therefore put new life into teaching and rid it of a certain measure of monotony.

If it were claimed that the loud-speaker — a soulless instrument — could supplant the teacher, then it would be better to exclude wireless entirely from school routine, for school broadcasting would mark a return to collective and passive teaching. These objections disappear when broadcasting is looked upon solely as an accessory medium of teaching, as a source of information or even recreation.

Subjects most suitable for Broadcasting.

Music undoubtedly heads the list of subjects which lend themselves best to broadcasting. Very few teachers can, in fact, organise concerts under favourable conditions. With

* From reports submitted by : 1) M. Julien KUYPERS, member of the Managing Committee of the I. N. R. ; 2) Dr. C. DE BAERE, Professor at the Athénée Royale, Brussels ; 3) Professor P. VERREAC ; 4) M. FURNEMONT, Director of the National School Museum, Belgium and of the Belgian School Broadcasting Association.

broadcasting at our disposal, however, nothing could be easier than to train the ear, to teach pupils to distinguish the tone of different instruments, to recognise a *leit motiv*, a sonata, etc. These broadcasts should be accompanied by descriptive commentaries. For singing lessons, the class should have the words before it, otherwise the broadcast is liable to be incomprehensible to the pupils.

Wireless is also an invaluable aid to the *teaching of languages*. We have here the choice of living talks on simple subjects, conversations between two or three persons who can convey an impression of reality, talks on the most characteristic features of the life of foreign peoples. The pupils thus have an opportunity of hearing correct intonation, pure pronunciation, etc., especially when the broadcasters are made to speak in their mother tongue. Pupils are furnished with a direct means of learning the construction of phrases peculiar to a language, which they sometimes find so difficult to understand with the help of dictionaries and the rules of grammar.

Talks on literature, in which reference is made to an author or to a given period, with readings from selected works previously analysed in the classroom, also constitute an aid of incalculable value both to the teacher and to the pupils.

The same may be said of talks on the *history of art*, archaeological discoveries, etc. These talks should be illustrated by the showing of lantern slides; these should be numbered and, in the course of his lecture, the broadcaster should himself give the signal for their removal and insertion in the lantern.

In the case of *geography lessons*, explorers should be invited to come to the studio and to relate what they have actually seen and experienced in the course of their travels. Talks may also be devoted to the study of the geography of a given country, with a background of scenes typical of the life of the people, the singing of folk songs, etc. Similarly, the pupils may be given an insight into the economic conditions of the country.

The experiments made in the broadcasting of *history lessons* have given rise to considerable discussion. The chief aim has been to reconstruct historical scenes, but, in many cases, these dramatisations seem to be rather superficial. A better course is to adhere to the system of teaching

history by means of anecdotes illustrating the economic, social and political life of a nation, or by the narration of a historical event by a person thoroughly acquainted with the "atmosphere" of the period.

The potentialities of broadcasting as an aid to the teaching of the sciences would seem to be rather limited. It is possible, however, usefully to deal with questions concerning the applied sciences, to give advice on health and hygiene, talks on the principal scientific discoveries and the path that is being followed by modern scientific research. But, for the teaching of the sciences properly so called, which need documentation and experiments, broadcasting can scarcely claim to be of any great value.

Broadcasting may also be used in giving occasional lectures on political economy, psychology, citizenship or in connection with some important national ceremony ; or, again, for the purposes of international teaching : the activities of the League of Nations with reference to an event of world significance.

Running commentaries (or outside broadcasts), which bring the pupils into direct contact with realities and distant happenings, constitute, especially for rural schools, a valuable means of promoting a spirit of national and international solidarity.

However this may be, experience would seem to confirm that *for children under 12, broadcasting cannot be more than a recreative medium* suitable for music, stories, short plays, recitations and songs. Generally speaking, the school broadcast given in Belgium are planned for pupils of intermediate grade schools, teacher training colleges and the corresponding professional schools.

Most convenient Hours for School Broadcasts. — In so far as the primary schools are concerned, the general consensus of opinion seems to be that the broadcasts should be given out of school hours. Certain secondary schools have intimated their intention of organising optional listening classes on Thursday and Saturday afternoons : provisionally, these broadcasts are given on Monday afternoons between 2 and 3, and last not more than 50 minutes.

A certain interval should be allowed between the different parts of the programme in order that the teachers may have an opportunity of explaining various points and of effecting a change over of pupils.

Collaboration with Teachers - Active Tuition.

To be really fruitful, broadcast talks should be *real lessons*. They should therefore be carefully prepared from pamphlets, etc., and should serve their purpose for subsequent lessons, either as a result of the fact that the new ideas absorbed concentrate the pupils' interest on later classroom work or that they encourage a simple exchange of views or individual investigations on the part of the pupils with the aid of the bibliography given in the *pamphlet*. It is advisable to divide the pamphlets and their illustrated supplements into different chapters bearing upon one subject or to a group of subjects. The compilation of documentation on each separate subject is thereby facilitated.

During the broadcast, the teacher should not hesitate to refer to maps and to write explanatory sentences on the blackboard. He may also make use of lantern slides, films, etc. Schools equipped with a cinematograph apparatus may be supplied with short reels of films illustrating the talks, thus allowing the eye to make good the inadequacy of a purely auditory system of teaching.

Since a broadcast talk should preferably be presented in the form of a lesson, the ideal *broadcaster* should not only have a radio personality, *he should, above all, and as far as possible, belong to the teaching profession*. The methodical co-ordination of ideas and the outlining of a clear and definite working plan are of the utmost importance. Certain words and experiments should be repeated as often as may be necessary, and a brief summary of the lesson should be made at the end of each talk.

As regards the presentation of broadcast lessons, *preference should be given to dialogues* rather than to formal lectures. Experimental lessons given by a teacher addressing at least two or three pupils have given good results. The teacher asks the pupils to answer certain questions and thus recapitulates the ground covered and applies the points to concrete examples.

For the teaching of foreign languages, the linguaphone may be used for preparing the lessons. The pupils will then be ready to listen intelligently to a conversation carried on in the studio by two or three foreign speakers.

II

A. — TEACHING IN GENERAL

The rôle of wireless broadcasting is not to usurp the position occupied by the school teacher but to illustrate and, at times, to supply a novel background to lessons in literature and history. The principal fields in which this supplementary action may be exercised are as follows :

a) *In primary schools*, for the teaching of the language of the country, the natural sciences, the principles of hygiene, history, geography, music, folklore, etc.

b) *In the higher primary schools*, for the same subjects, with the addition of modern languages, political economy and technical talks.

c) *In secondary schools*, for teaching the same subjects as those enumerated in a), with the addition of foreign languages.

Teaching methods. — Since dialogues are too apt to give the impression of a lesson learnt by heart, it is preferable to adopt the system of actual or imaginary eye-witness accounts, which make the broadcasts more attractive and more vivid. A series of lectures on the same subject also gives very good results.

B. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS

Talks on the work and organisation of the League of Nations have been broadcast for secondary school pupils. By way of example, the title of one of these talks was "Peace and goodwill to men !".

III

The subjects which lend themselves best to this method of teaching are those which require no material or equipment and the study of which is pursued chiefly by listening : music, languages, and, to a certain extent, history. Next in order come geography and the natural

sciences, which subjects may be taught with the aid of films, lantern slides and simple apparatus for experiments.

The dialogue form of presentation is the most "human" and vivid method of teaching but the lessons so given should not be allowed to become of too stereotyped a character. Lessons given in series should be rather the exception than the rule. Carefully prepared talks are preferable, but they should, however, be reserved for senior pupils.

IV

I. — TEACHING IN GENERAL (PRIMARY AND SECONDARY SCHOOLS)

The rôle of School Broadcasts.

In its present stage of development, broadcasting cannot be regarded as being anything more than a casual and supplemental medium of teaching; although its possible range of action is wider, broadcasting may be compared with the cinematograph, lantern slides, gramophone records, etc. Thanks to this method of teaching, school-children may hear eminent Belgian or foreign scholars, writers, orators, artists, musicians, scientists, explorers and leaders of industry. Thanks to outside broadcasts and running commentaries, they may also listen-in to official ceremonies and important current events. Far from supplanting the teacher, this method of teaching, on the contrary, requires his personal co-operation at all times: the teacher should remain the leader of teaching proper. With the help of the programmes published by the broadcasting organisations, he should prepare his class for the broadcast, and afterwards he should define and explain certain details, correcting faulty interpretation on the part of his pupils; in short, it is for the teacher to complete the lesson in such a way that the children derive the maximum benefit from the broadcasts.

Subjects.

It is to be noted that the subjects of an educational tendency are precisely those which offer the greatest possibilities to the organisers of broadcasts and the greatest

attraction to young listeners, for example : *literature, elocution, voice training, music, history of art and of the sciences, folklore, etc.* To these may be added : *history and geography, the natural sciences, foreign languages, social economy, hygiene, etc.*

In the case of the *primary schools*, more than in any of the other grades, the broadcasts should appeal to the activity and imagination of the pupils. By way of example, we would mention the broadcast given on December 15th, 1930, on the following subject : "December folklore ; St. Nicolas, Christmas, etc." The broadcast opened with a few legends evoking the folklore customs of Belgium and foreign countries, followed by the singing of appropriate songs ; essays written by school children on this subject were then read and commented upon, the broadcaster announcing the names of the Belgian and foreign children taking part in this previously organised test.

The evocation and explanation of natural phenomena (snow, seas, mountains, etc.) also furnish a good subject for broadcast talk for pupils between the ages of 10 and 14. For younger children, the talks should introduce local songs, fables with a moral, advice on the care of the hands, the teeth, etc.

The possibilities are greater when the broadcasts are addressed to the *higher primary schools and secondary schools* since the attention of the pupils may be held longer and their range of knowledge is much broader. The following subjects may therefore be dealt with : *literature, foreign languages, running commentaries* (visits to public buildings and services, eye-witness accounts of ceremonies, etc.), *history and geography* (travel talks, systematic study of a given district or country), *history of art, music, hygiene, citizenship, natural sciences, etc.*

Methods of Presentation.

These broadcasts should be given in the form of short talks, alternating with readings or the playing of appropriate music. A young interlocutor may also be invited to the studio, where he will ask the lecturer certain questions ; when adopting this method, care must be taken to avoid giving the pupils the impression that they are listening to a conversation which has been prepared beforehand and,

therefore, artificial in its effect. Outside broadcasts, which bring the children into touch with living realities, are particularly recommended. The method which consists in making the lecturer address a group of pupils actually in the studio can never be more than an imitation of the classroom lesson and, for that reason, should not be practised. Furthermore, these talks should not be presented in the form of systematic lessons. In so far as possible, these talks should be self-sufficient and should contain an educative factor within the general framework of the subject.

In order that school teachers may be associated with this work, the School Broadcasts Committee has organised several competitions among the different teaching grades with a view to determining the methods best adapted to the Belgian school curricula and to the national psychology.

Preparation of Programmes and Lessons. — Active Tuition.

Programmes are prepared by a committee composed of educators and technicians under the auspices of the Ministry of Science and Art.

A pamphlet, "*La Radiophonie scolaire*", written in collaboration with the lecturer, is addressed in due time to the teachers in order that they may prepare their pupils for the broadcasts. In addition to the programmes, these pamphlets give a summary of the talks, the object of the lessons, the grade of pupils for whom they are planned, a bibliographical note when reference is made to the work of a great master, the exercises to be done by the pupils, the text of recitations, illustrations, maps, and pictures of the different instruments used, etc. In order to stabilise the attention of the children, especially in the junior classes, they should be shown a portrait of the lecturer and of the persons mentioned in the course of the talk. A lantern for the showing of slides may also be used in conjunction with the loud-speaker.

Furthermore, talks should be short and of a varied description. An appeal should be made to the activity of the pupils in a variety of ways ; competitions may be organised among listeners, consisting more generally in the writing of a brief essay on the subject of the broadcast ; prizes may be awarded for the best efforts and the names of the successful competitors announced through the microphone.

Lastly, in order that the more advanced pupils may make a more detailed study of a subject, the pamphlets should give a bibliographical list of the principal books which might usefully be consulted.

Verification of Results. — In order to judge of the educational value of these broadcasts, investigations were carried out in 1930 by means of a *questionnaire* and two *tests*. The questionnaire was intended to ascertain the impression made on pupils of from 14 to 17 years of age. The object of the tests was, firstly, to determine the practical advantages derived by the pupils and, secondly, to compare these advantages with those derived from similar lessons given without the aid of broadcasting.

The conclusions reached were as follows :

95 per cent of the pupils were in favour of the broadcasts. Of this number, 75 per cent stated that the broadcast lessons enabled them better to appreciate masterpieces of literature ; 10 per cent stated that they were a pleasing and attractive variation from normal routine, and 5 per cent that they were very useful for learning languages.

95 per cent were in favour of appropriate musical interludes.

As regards the *subjects* to be chosen, 50 per cent abstained from expressing an opinion ; 20 per cent asked for lectures on literature, 10 per cent preferred history, 10 per cent geography, 10 per cent sports, hygiene and politics.

The object of one of the tests was to ascertain, by means of a series of questions, how much the pupils had retained from these broadcasts. The first test showed a result of 4.8 marks on a maximum of 10, whereas the comparison test gave 6.55.

The rather poor results of these early broadcasts were largely due to faulty conditions of reception and inexperience in manipulating the receivers. To remedy these drawbacks, the association known as the "Radiophonie à l'École" organised an exhibition of receivers suitable for school use and practical demonstrations by reliable makers of sets.

II. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS

During the annual propaganda week for the League of Nations, talks on this subject are broadcast for school listeners. The pupils are prepared beforehand so that the broadcasts may be as fruitful as possible. Thus, in November 1930, following a talk by M. Gottschalk, President of the Belgian Propaganda Committee for the League of Nations, many new members were enrolled in the Belgian Union for the League of Nations, 30 being secured in the intermediate school for girls at Boom alone. Mention may also be made of the talks organised by *La Radiophonie scolaire* at Christmas 1931 : one in French by Count Carton de Wiart, Belgian Delegate to the League of Nations, and the other in Flemish by M. Henry Robin. The results of these talks on the work of the League were also highly satisfactory.

Instead of using these broadcasts as a means of systematic teaching, it is preferable to give, in connection with national or international events, interesting talks by persons of note, provided, however, that these talks are presented in a manner comprehensible to children. But although care should be taken to avoid giving the children the impression that they are following a series of systematic lessons, this does not mean that the purpose of these broadcasts should not be pursued methodically.

Talks on the civilisation and folklore of the different countries, short addresses by personalities speaking in the language of these countries, musical recitals, folk songs, etc., comparative studies of the folk arts, literary works, music, painting, and bibliographies of famous men of these countries, are extremely valuable in promoting the *international spirit*.

From this point of view, readings of folklore stories written by Belgian and foreign pupils would be particularly effective.

As in the case of general educational subjects, these talks on the League of Nations require careful preparation. The major national associations concerned with propaganda on behalf of the League of Nations should collaborate with the programme committee. Their representatives should,

however, be invited to come to the microphone only occasionally.

These broadcasts should not take place on fixed days and at fixed hours, as such an arrangement means that the classroom work of the same teacher will always be disturbed. They should be of an occasional character and organised within the limits agreed upon by the programme committee.

After the broadcasts, teachers should remember to distribute to their pupils the pamphlets relating to the subject of the talk, so that they may improve their knowledge, thus making the talk a far more effective aid to propaganda.

CANADA *

School broadcasting has not yet been placed on a systematically organised footing in the different provinces of Canada. An exception must, however, be made with regard to Manitoba, where regular wireless courses of instruction were inaugurated in 1928 for the benefit of the High Schools, principally those situated in small urban centres. These lessons of 30 minutes' duration are broadcast twice weekly and comprise the following subjects : English literature, the history of Great Britain and Canada, physics and chemistry. They are given with a twofold purpose to facilitate the work of pupils who are pursuing their studies alone, and, in the schools with a small teaching staff, to help the teachers and to maintain contact between members of the teaching profession.

In the opinion of a large number of educators, school broadcasting has made no great strides in Canada because practically the entire broadcasting system is in the hands of commercial undertakings. For this reason, the Royal Commission on Radio Broadcast, supported by the universities, moved a resolution advocating the formation of a National Broadcasting Company, the supervision of the programmes being left to the provincial authorities in so far as concerned the transmitters broadcasting in each province. It is only on this basis that it will be possible to organise programmes, and, above all, to establish liaison between lecturers and the schools and to obtain fruitful results from this form of teaching (Extract from a report submitted to the Institute by Dr. Carleton Stanley, President of the Dalhousie University, Halifax, Nova Scotia).

BROADCASTING AND THE TEACHING OF LANGUAGES

According to Professor H. Mercer, of the Dalhousie University, although it has been found that, up to the present, the gramophone was eminently suitable for this form of

* From reports communicated by Messrs. Carleton STANLEY, MERCER, W. PATTERSON and E. A. CORBETT.

teaching (because it is possible to stop and restart or even repeat a record as and when the teacher considers this necessary), broadcasting can be used for asking and answering questions, thus ensuring real co-operation between pupils and teachers. It also allows two persons to speak before the microphone, one of whom may be an educator belonging to the country and the other an expert in a foreign language, preferably a foreigner. A conversation may thus be planned in the form of a series of questions and answers between listeners and the language expert. This method puts life into a lesson, encourages the listener to think for himself and stimulates his interest. In this way also, the foreign teacher will be regarded by the pupils as representing the civilisation of his country. It will be the duty of the national teacher to choose the subjects and methods which he deems the most appropriate for his pupils.

HIGHER EDUCATION

The majority of the professors attached to faculties are of the opinion that *broadcasting is more useful for the diffusion of university extension courses than for the normal lessons comprised in the university curricula.*

Thus, the University of Acadia broadcasts short special lessons on English literature, political economy, psychology, the history of Canada, and courses in music with recitals. The present tendency is to broadcast separate lectures rather than a series of lessons on the same subject (Extract from the report communicated to the Institute by Dr. W. Patterson, President of the University of Acadia, Nova Scotia).

This view is also shared by Dr. E. A. Corbett, Director of the University Extension Department of the University of Alberta. In addition to lessons on English literature, languages, history and geography, art science and political economy, intended for a more limited section of the public, talks have also been organised for the inhabitants of rural areas. The latter include practical advice and guidance.

The University has also organised special broadcasts for the benefit of former students. These talks last about 30 minutes and are intended to keep the *alumni* informed on the activities and scientific life of their university.

Every year, the University of Alberta broadcasts a series of talks on the work of the League of Nations and on the principal international problems. As observed by Dr. Corbett, it is in this field that radio can render the greatest services and is proving its value as a powerful instrument for promoting a spirit of understanding and international co-operation.

CZECHOSLOVAKIA *

The School Broadcasts Committee set up within the Ministry of Public Education is responsible for the drawing up of the programmes. The educational broadcasts are intended for the *primary schools* and are divided into two classes : elementary and intermediate. They are given every Friday from 10.30 to 11 a.m. for the elementary class, and from 11.5 to noon for the intermediate class. The programmes, *which are of a purely supplemental character*, are prepared and transmitted by the Czechoslovak Broadcasting Company : "Radio-Journal".

In addition to these broadcasts that take place during schools hours, this same company organises programmes specially designed for children. These broadcasts include subjects of a recreational as well as an educational nature (Mondays and Fridays from 5.35 to 5.45 p.m.), talks on literature (Saturdays), explanatory talks (Thursdays from 5.35 to 6.5 p.m.)

University instruction courses are not broadcast but lectures are delivered by distinguished lecturers on literary, artistic, scientific and economic subjects.

"Radio-Journal" also regularly broadcasts the wireless bulletin of the League of Nations, together with information concerning its activities. The Company broadcasts the speeches delivered at the September Assembly of the League, the messages sent out on Goodwill Days and the meetings organised by the Czechoslovak Red Cross for the promotion of world peace.

* From the report submitted by Professor V. PATZAK, Chief Commissioner at the Ministry of Public Education.

DENMARK •

I

TEACHING IN GENERAL

Wireless broadcasting is used as a *supplementary medium* of education in the majority of schools, principally in the *primary schools*.

The subjects taught by this means are, for the primary schools: history, geography, music and the natural sciences; for the higher primary schools and colleges, modern languages (Swedish, German, English and French) are taught in addition to the above subjects.

The primary aim of the organisers of these broadcasts is to make these lessons comprehensible to child listeners. Even if the broadcasts do not wholly correspond to the intellectual standard of development of the pupils, experience has shown that talks of a simple nature give better results than lectures which are partly beyond their understanding.

Methods.

Lessons in history, geography, and the natural sciences, should be given in the form of *talks*. For the teaching of *languages*, the instructor should begin by reading a text slowly, stressing words which are difficult to pronounce and repeating them several times in order to impress them on the pupils memory. Words which are difficult to understand should be explained in the same language. The teacher should then read the text over again, without interruption and in the tone of an ordinary conversation.

Adaptation of Broadcasts to School Curricula.

In order to adjust these broadcasts to school curricula, a standard programme must be planned once and for all,

* From reports communicated by: 1) Mr. Henrik MADSEN, Principal of the St. Jörgen Lyceum, Secretary-General of the School Broadcast Committee at the Ministry of Public Education; 2) Mr. Fens ROSENKJÆR, Director of the Higher Popular School at Borups.

so that teachers may know at what time and on which days they will receive a talk suitable for one or other of their classes.

Preparation of the Programme.

The person entrusted with the planning and preparation of programmes should place himself in touch with qualified officials and discuss with them beforehand the form of the talk, its substance, and even read to them the text before it is broadcast. The organiser should make a point of being present at one of the schools taking the broadcast and, later, of discussing the effect produced on the pupils with the broadcaster himself. To ensure satisfactory results, the person who plans the programmes should belong to the teaching profession. Without any great difficulty, he might possibly carry out these duties simultaneously.

II

INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT

On the first Monday of September in each year, two lectures dealing with the work of the League of Nations are broadcast, together with a series of informal talks on the post-war situation in Europe.

These broadcasts are arranged in collaboration with the Ministry for Foreign Affairs and the Embassies of the different countries in Copenhagen. During the sittings of the League Assembly at Geneva, talks prepared by the Danish delegates to the League of Nations are organised.

For the "Children's Hours", some of which are specially arranged for boys and others for girls, an endeavour should be made to include programmes dealing specifically with the national customs of the different peoples, with children's games and school hobbies.

It is desirable that the broadcasting organisations of the different countries should collaborate in this matter and exchange their programmes.

At the Copenhagen University, the student organisations arrange a series of lectures on the League of Nations every year, personalities familiar with international problems being invited to deliver some of these lectures.

FINLAND *

Although school broadcasting proper has not yet been definitely organised in this country, the Programme Committee of the Finnish Broadcasting Company has, for many years past, regularly broadcast lessons in foreign languages. These courses include the elements (grammar and phonetics) of German and Estonian and may be regarded as forming part of the system of primary education.

Up to the present, educational broadcasting has been organised chiefly for *adults*. These broadcasts, planned in collaboration with the Association for Adult Education (Kansanvalistusseura), are given twice a week and are adapted to the studies pursued in students' clubs. Questions connected with the work of the League of Nations and the International Labour Office figure in these programmes.

* From a report communicated by M. Niilo LIAKKA, former Counsellor at the Ministry for Social Affairs.

FRANCE •

I

As stated in the report drawn up by Colonel BRENOT, Chairman of the "Syndicat professionnel des Industries Radio-Électriques", educational broadcasting in France is now being co-ordinated and organised on a proper footing.

The conversations held by members of the French National Committee on Intellectual Co-operation with officials at the different ministries or in the public services and with representatives of the unofficial broadcasting stations showed very clearly that while, in some quarters, efforts are being made to improve technical conditions and methods, others are following the activity and progress of educational broadcasting with considerable interest and hope that the results obtained will serve as a valuable guide to them in the adjustment of their own service.

In this survey, we will not discuss the general considerations regarding educational broadcasting either as a direct or an indirect means of teaching and instruction.

A committee sat at the Ministry of Public Education as long ago as January 1928 to examine this question and the conclusions reached by that body will be found in a report drawn up by M. BARRIER, who is also one of the members of our Sub-Committee on Broadcasting.

We will therefore confine ourselves to stating the results really achieved and the efforts really being made, from which it will then be possible to deduce and summarise our conclusions.

These practical conclusions are, in fact, of the highest interest to the different Ministries, as confirmed in the observations which they presented to the French Committee on Intellectual Co-operation, while the practical results

* From reports submitted by : 1) the French National Committee on Intellectual Co-operation ; 2) M. BARRIER, Secretary of the Broadcasting Committee at the Ministry of National Education ; 3) M. H. TROCHY, Professor at the Faculty of Law, Paris ; 4) M. GLAY, Secretary of the National Union of Teachers at the National Broadcasting Congress, 1929.

obtained and the recommendations put forward are valuable to the broadcasting organisations which are already in touch with numerous listeners who are either isolated in their own homes or grouped together as members of wireless clubs.

The Ministry of Foreign Affairs is attentively following the experiments now being carried out in France and in other countries with a view to the teaching of modern languages by wireless. In this connection, it is not without interest to recall that the opinion of teachers of modern languages was stated at the Second International Congress of Teachers of Modern Languages (meeting of April 3rd, 1931, at the Sorbonne under the chairmanship of M. Ch. GARNIER, Inspector General of Public Education) (1).

The State Department of Physical Education, recognising the educational value of broadcasting, examined the possibilities of its rational adoption with a view to the drawing up of a general programme. Lectures delivered at the higher courses of physical culture have already been broadcast by the P. T. T. transmitters.

Furthermore, a circular issued by the Minister of Public Education invited schools to organise short early morning physical culture sessions for boarders ; a certain number of schools follow one of the two physical culture lessons broadcast every morning by Radio-Paris.

The Ministry of Agriculture has not yet carried out any practical experiments in connection with the broadcasting of agricultural information and propaganda ; the question of the use that can be made of wireless in rural areas is, however, receiving the attention of this Ministry and the question is being studied by its competent services.

The Air Ministry devotes its broadcasts to air traffic and has not yet adopted wireless for purposes of instruction.

The State Department of Fine Arts is also studying the educational possibilities of wireless in connection with the broadcasting of performances given in the national theatres ; several broadcasts of this kind have already been given.

The Ministry for the Mercantile Marine does not think it possible to make any regular use of broadcasting for a

(1) Cf. *Compte rendu général*, Paris 1931, pp. 455 ff. The conclusions of this report are definitely in favour of wireless as an auxiliary means of teaching modern languages and of promoting a spirit of international understanding.

branch of instruction which, like that given in the naval training colleges, consists chiefly of mathematics.

For lectures dealing with general questions concerning the merchant service, such as the organisation of maritime commerce and transport, equipment of ports, etc., that is to say lectures given more with a view to vulgarisation than for the purpose of technical tuition, the Ministry for the Mercantile Marine prefers talks given directly to pupils and illustrated by suitable films.

For the dissemination of maritime propaganda, however, this Ministry has resorted to broadcasting for stimulating interest on the part of listeners in all classes of society in matters concerning the sea. Lectures have been broadcast by officials attached to the Central Administrative Department on the importance of knowing how to swim, the organisation of life-saving services along the coast, the food value of fish, etc.

The Ministry of Public Health is using broadcasting on an ever increasing scale for disseminating the principles of public health and propaganda in the campaigns against cancer and tuberculosis. Through the P. T. T. transmitters or through those of the regional stations of this department, the Public Health Ministry organised 50 broadcasts in 1927, 231 in 1929, 975 in 1931, exclusive of the relays of these broadcasts in the provinces and to the colonies.

In particular, this Ministry calls attention to the initiative taken by the "*Compagnie française de Radiophonie*", which has set up a Committee composed of eminent medical men who give a series of popular talks on a variety of medico-social questions.

This Ministry has also found considerable support in the different broadcasting concerns. It mentions, for example, the *Radio-Journal* and the *Union des Grandes Associations Françaises pour l'Essor National*.

Lastly, it is interesting to note that the Ministry of Public Health is definitely convinced of the value of these broadcasts. Its conclusions are based on correspondence exchanged with listeners or on visits paid to the different departments of the country. It has even adopted a broadcasting technique, that is to say, it recommends short talks, built up of phrases that appeal to the imagination and remain fixed in the memory.

Before replying to the enquiries addressed to it by the

French Committee of Intellectual Co-operation, the *Ministry of Public Education* issued a special circular in February 1932 with a view to obtaining further information that would supplement the data already collected by the above mentioned Committee.

Members of the teaching profession, and more particularly schoolmasters, play a very important part outside the normal classroom work in the advancement of popular education ; the observations presented by the Ministry of Public Education are therefore of especial interest.

Generally speaking, and with a few exceptions; as for example in the department of *Ille-et-Vilaine*, where on the initiative of the Departmental Inspector, *Radio-Rennes* gives two school and educational broadcasts every week, the results so far obtained have not come up to expectations.

The reasons for this setback would seem to be as follows : the broadcasts are given at different hours of the day and are of varying duration ; to receive them, school teachers are compelled to change their time-tables. Furthermore, the broadcasts are not adapted to the school curricula or to the standard of the pupils' understanding. Children soon tire of listening to an invisible speaker and of following a talk which does not impress them in the same way as a " live " lesson adapted to their surroundings, habits and even their manner of speech.

As regards the League of Nations, accounts of the Geneva proceedings and a few addresses delivered by national delegates (generally too abstract in form and dealing with vast and complex problems) do not interest young pupils.

Nevertheless, there can be no doubt that wireless broadcasts, if judiciously planned, could be of service in primary school teaching, and still more so in secondary schools and post-school education. In order that they may be really fruitful, these broadcasts should be arranged to take place at fixed hours, according to a programme drawn up in advance and published beforehand in the departmental pamphlets and educational journals ; above all, they should be specially designed to suit the class of listeners for whom they are intended, that is school-children on the one hand, and adolescents and adults attending post-school courses, on the other. Lastly, it is desirable that the broadcast should be of a regional and even departmental character.

By way of suggestion, the broadcasts for children might

be given on Wednesdays and Saturdays from 3 to 4 p.m., or in the morning at an hour when the ether is less "crowded" and therefore more favourable for good reception. The programmes might include readings from selected works, lessons in elocution, entertaining sketches and, above all, musical items (school songs, group singing, and masterpieces accompanied by descriptive talks).

For adolescents and adults, the broadcasts might be given two or three times a week between 6 and 9 p.m. ; the programmes (talks on literature, art and science ; recitals of classical music, and talks of practical subjects, e.g. : agriculture, various crafts, hygiene, common law, rural law, new laws, etc.) should be prepared in agreement with the departmental education officials and in accordance with the proposals of the teachers in charge of post-school courses.

Lastly, instruction in the aims of the League of Nations should be given in a manner that takes into account the age of the listeners ; the talks should be brief and clearly expressed for young pupils, and more detailed and academic for adults. Too great emphasis, however, cannot be laid on the importance of making these talks simple and free from legal or philosophical terms.



The above considerations having been stated, it is now necessary to show how the wireless broadcasting organisations are endeavouring to meet the needs of listeners and, generally, how they are seeking to make broadcasting a veritable medium of education.

Broadcasters are very definitely of the opinion that to be efficacious, educational wireless must be neither dull nor boring ; the attention of listeners must be gripped. They have also come to the conclusion that, in so far as school classes themselves are concerned, broadcasting should not be regarded as a substitute for the teacher but as a means of supplementing his work.

Finally, experience has shown that material links must be furnished between the broadcaster and listeners in the form of books, pamphlets and leaflets that can serve as "visible organs of reference".

The transmitter operated by the *École Supérieure des*

P. T. T. devotes a part of its programmes to educational broadcasts. Every Wednesday, for example, it broadcasts a talk on *horticulture*.

Two talks, one daily and the other weekly, are given regularly to further the development of *technical and professional education*.

Once a week, talks on *biology* are broadcast and, in collaboration with the Cancer Institute, the Committee for the Prevention of Tuberculosis and other similar organisations, it broadcasts propaganda for the protection of public health and the campaign against *social scourges*.

Qualified instructors are invited every week to deliver educational talks, some of which are addressed specially to children.

Lessons in foreign languages, English, German and Spanish, are broadcast regularly on Sunday mornings, and in the evening at about 7.30, when it is calculated that the greatest possible number of listeners are free.

As regards *music lessons*, the programmes of this transmitter are of an extremely varied character. Explanatory talks, accompanied by recitals, are broadcast to initiate listeners to the history and evolution of music.

Talks are also organised on the arts : sculpture, painting and architecture. Listeners are kept informed of the principal art exhibitions and, under the auspices of the National Touring Office, the *P. T. T.* station furnishes its listeners with information regarding the more important regions of France, picturesque spots, historical buildings, the resources of the different provinces, etc.

Outside broadcasts and running commentaries are organised on the occasion of important regional events with a view to making known the customs of the different parts of the country.

The broadcasting service, which functions under the direction of M. PELLENC at the Ministry of Posts, Telegraphs and Telephones, the department to which the transmitter of the *École Supérieure des P. T. T.* is responsible, broadcasts, in addition to these programmes of *direct education*, programmes of *indirect education* consisting of *news bulletins*, talks on *non-professional subjects*, *relays of foreign broadcasts* and the *transmission of radio-plays*.

To interest listeners, an elaborate technique has been adopted and adjusted : an endeavour is made to hold the

listener's attention without tiring him, and to awaken his curiosity. Experience seems to prove that the most suitable time for the broadcasting of educational talks is between 12 and 1 p.m. and between 5 and 7.30 p.m.

The P. T. T. station broadcasts *communiqués* on the work of the League of Nations. International relays are generally preceded by a short talk explaining the source of the broadcast. Furthermore, reviews of foreign affairs inform listeners on international problems and on the spirit and attitude of the different governments that have to solve them. These political talks stimulate the interest of the public and encourage it to seek further information on current events. The educational broadcasts given by the chain of transmitters operated by the French State are organised in the same spirit and along the same lines as those of the *École Supérieure des P. T. T.* The colonial transmitter recently erected at Pontoise broadcasts on a short wave-length thus enabling listeners in all the French possessions to hear the news bulletins and educational programmes of the mother-country.



The privately-owned French wireless stations also display considerable activity in the organisation of educational programmes. According to the statements made by their directorates, their work would be extended still more if their funds, derived almost exclusively from publicity fees, were not so limited and if greater official assurance were forthcoming as regards their future. The following are a few examples of their activities :

Music lessons : Every Friday, *Radio-Paris* broadcasts a talk on the history of music, accompanied by gramophone recitals, and on Thursdays, lectures on the same subject without records.

Twice a week *Radio-Côte-d'Azur* broadcasts specially selected modern compositions, accompanied by explanatory talks ; once a month this same station broadcasts talks by musical critics.

Agriculture : Practically all the private transmitters broadcast talks on agriculture, fertilizers, etc.

Foreign language courses are included in the programmes

of Radio-Paris, Bordeaux-S.W., and Radio-Côte-d'Azur, the last named giving lessons in Esperanto.

The above remarks apply naturally also to a number of other stations, such as Radio-Toulouse, Radio-Lyon, Radio LL, Radio-Nîmes, Poste-Parisien, etc.; all these transmitters broadcast talks of a professional character, lectures on literature (on the lines of those given by Radio-Paris on English and German literature), miscellaneous talks on political economy, pedagogics, climatology, hygiene, physical culture, etc. They also organise outside broadcasts and commentaries in connection with meetings and congresses of an educational nature.

As regards the potentialities and value of educational broadcasting, the private transmitters express the same views as the directors of the official State stations; they declare that if a careful distinction is made between educational programmes planned for the benefit of definite groups of school-children and adults, a vast field of action is open to the initiative of broadcasting stations.

II

PRIMARY AND SECONDARY EDUCATION

The Rôle of School Broadcasting. Subject Matter of Lessons.

There can obviously be no question of envisaging a regular scholastic organisation in which a few teachers would, from their respective studios, broadcast a series of uniform lessons for a wide circle of listeners. The essential condition of education and the feature that makes all teaching profitable are to be found in the combination of the personal action of the teacher and the *effective participation* of his pupils in the classroom, and the modern conception of what is called the "active school" would be incompatible with a more or less mechanical system of teaching akin to mass production.

For *elementary primary schools*, as for infant schools, it will immediately be realised that broadcasting can be of relatively little value; in this grade, more than in any other, the age of the pupils makes the presence of the teacher and frequent revision of lessons indispensable. Moreover, the essential aim of education, especially at this

age, is to develop the children's mental activity by means of observation and reflection. The receptive and, in a way, passive attitude that would result from the frequent use of broadcasting would therefore be contrary to the very aim of all educational work.

It must be said, however, that in *infant schools*, where the schoolmistresses can neither sing, nor play an instrument, and cannot therefore suitably conduct the singing, drill and dancing of their pupils, *short broadcasts of children's songs given with the proper rhythm* and timed to coincide with the arrival and departure of the children can render a real service, such as that rendered by a gramophone, which is still a more convenient instrument to use for this purpose.

Similarly, broadcasting can find only a fairly restricted use in *elementary primary schools*. Here, also, the gramophone might suffice to give the pupils examples of good elocution and correct pronunciation, free from local dialectic influence. On the other hand, and provided that programmes are planned by a central committee, broadcasting can be used as an aid to the *musical education of children*. Furthermore, a "Children's Hour" on Wednesdays or Saturdays would contribute an element of novelty, gaiety and life that would be of considerable value.

Broadcasting would be of great assistance to the teachers in rural schools, more so, in fact, than to the pupils, as it would enable them to keep in touch with the outside world. They would also find it more easy to adapt themselves to rural conditions of life.

As regards *secondary schools*, wireless can be used as a means of :

a) *teaching proper*, more particularly for the teaching of *modern languages, music, history, art, science and literature*.

Teaching of modern languages : Talks broadcast in a foreign language by foreign instructors are of considerable value to *pupils who have already a good knowledge of that language* ; they are of no great utility for others, for immediately they hear a word that is new to them, the effort made to grasp its meaning makes them lose the thread of the lesson, the speed at which the broadcaster speaks always being too great in their opinion.

These broadcasts should be announced well in advance

so that the pupils may have an opportunity of preparing the text at school. It will be seen therefore that, by means of these broadcasts, normal teaching methods are supplemented by auditory demonstrations in accurate pronunciation and diction.

These courses might be organised either on a national or on an international basis by a central committee that would be entrusted with the planning of the programmes and the choice of instructors.

Music : In order that musical broadcasts accompanied by descriptive talks may serve to develop the pupils' taste for music, they should be given in logical sequence ; a systematic course of lessons should be devised to fit in with a definite plan of study and published beforehand so that the pupils may be prepared for the broadcasts by historical or technical explanations.

History of Art : These talks should also be announced in advance and accompanied by information as to the material to be obtained for purposes of illustration and documentation.

Sciences : In this field, no attempt should be made to teach the sciences in the proper sense but vividly to portray the lives of eminent scientists, with readings of passages from their works ; talks may also be given on the history of the world's great inventions and on the most notable discoveries of our time. The necessary material and lantern slides should be prepared in advance.

Literature : It has been found that after being partly introduced to a work by the reading or recitation of selected passages by specially qualified broadcasters, pupils read the work in its entirety. Thus, far from acting as a deterrent, these broadcasts are an encouragement to good reading. Programmes methodically organised and announced in advance, combined with the broadcasting of texts judiciously selected and well recited, are a valuable contribution to the literature lessons given by the school-teacher.

b) *Instructive recreation*, outside the usual school hours and curriculum.

Certain broadcasts intended for the general public might be taken by the schools, provided that they are announced in good time, and the text known in advance, so that teachers may have an opportunity of judging whether they are suitable for their pupils.

Other broadcasts should be given specially and regularly for school-children. They might deal with a great variety of subjects, literary as well as scientific, topical talks on the lives of great scholars and artists, important international problems (1), life abroad (particularly school life), sport, vocational guidance, drama, musical plays, etc.

The primary aim should be boldly to depart from the usual school routine and not to present these broadcasts in the form of lessons in disguise (that would soon be penetrated by the pupils), to keep the children constantly on the alert for some new feature and so to stimulate their interest in, and observation of, the phenomena in their immediate surroundings.

III

THE USE OF BROADCASTING IN HIGHER EDUCATION

In examining this aspect of the question, it is necessary to make a distinction between the *regular courses* held by faculty professors and the *special courses* of instruction which supplement the regular educational lectures as study guidance classes, on the one hand, and the *talks* given with a view to the popularisation of learning, on the other.



1) As regards the broadcasting of *regular courses*, it is generally agreed that those held in the faculties of *letters*, at least those which are of a nature to interest the general public, are suitable for transmission. Some authorities even suggest that it might be possible to bring about an agreement between several faculties with a view to the distribution of the different subjects among the several centres.

Opinions regarding the teaching of *law* are very divided. A number of faculties of law categorically reject the idea

(1) In this connection, the *Compagnie française de Radiophonie* broadcasts, for the special benefit of the primary schools, a series of talks on the aims and work of the League of Nations and the major international institutions.

of broadcasting regular courses of instruction. Others consider that certain of the regular courses, for example the doctorate course, might be broadcast with the consent of the professors.

The faculties or schools of *medicine and pharmacy* and the faculties of *science* unanimously declare that the regular courses are not suitable for broadcasting. The kind of tuition given in these establishments necessitates blackboard demonstrations, practical experiments and laboratory work, all of which presuppose that the students are actually present.

2) With regard to *special courses*, having the character of study guidance courses, the faculties or schools of medicine and pharmacy and the faculties of science are opposed to broadcasting for the reasons given above. Broadcasts of these courses in the faculties of law and letters might serve a useful purpose, provided that they were not too frequent. On this point also, opinions are very divided. Talks lasting about 15 minutes might be supplemented by the distribution of leaflets, programmes and bibliographical advice, etc.

The faculties which are opposed to the idea of adopting wireless broadcasting for teaching in the proper sense base their objections on reasons that undoubtedly deserve full consideration. In their view, students would find therein an excuse for absenting themselves from the courses. Modern teaching methods imply personal contact between professors and students and between the students themselves. Broadcasting would lead to a sort of "mechanisation" of teaching which would diminish its efficacy.

3) There is, however, general agreement as to the utility of broadcasting *instructional courses* or talks of a *popular type for the benefit of the general public*.

To recapitulate, therefore, broadcasts might consist of the following :

- a) A large number of the public lectures given in the faculties of letters.
- b) Some of the private regular courses held in the faculties of law and the faculties of letters either for the students attending these faculties or, if a system of exchange were introduced, for the students of other faculties.

- c) Some of the special courses held in certain faculties of law or letters.
- d) A large number of popular lectures or talks.

However this may be, broadcasts of this description should not be initiated without due caution, especially in regard to the regular courses, which usually last an hour. To listen to a lecture of this length without having one's attention held by the presence of the lecturer and by the life and movement which he puts into his delivery, is a test that may be too severe even for the most willing and zealous of students.

As regards the *drawing up and execution of programmes*, it is for the universities and faculties to take the initiative and to formulate their proposals. Further, it is indispensable that one or two co-ordinating bodies should be appointed. It would even be necessary to have a co-ordinating committee for each region, in addition to a national co-ordinating committee, or at least an inter-regional body, as from the date when the broadcasting system is sufficiently developed to enable each university to broadcast over the whole of the country.

In view of the extremely high cost of erecting a fully equipped transmitter (from 1,500,000 to 2,000,000 francs) and of its upkeep and operation (1,000,000 francs per year), the installation of a station exclusively reserved for these broadcasts cannot be contemplated.

IV

THE PLACE OF BROADCASTING IN PRIMARY SCHOOLS

The chief difficulty to be contended with, especially in elementary schools, is the training of children to acquire ideas and to express them. The basis of all learning should therefore be direct and accurate observation. When the pupils have thus absorbed knowledge, they are required to express in words what has been recorded in the brain through eye and ear. The rôle of the educator is therefore to guide the pupil in this process of acquiring knowledge and, as and when this knowledge is revealed to him, to furnish him with the means of expressing it in words.

The human senses constitute the foundation of any intellectual process and the personal effort of the child is indispensable for the creation of lasting impressions. The fundamental principle of teaching is precisely to seek out the will of the child and to determine individual action. With this conception of the aim of teaching, we are of the opinion that the question of broadcasting is not of primary importance in the general system of education. Its adoption in conjunction with the regular work of a class of pupils is not even to be recommended for children between the ages of 6 and 13. We do not, however, condemn the use of wireless receivers outside normal school hours. Outside class lessons, broadcasting may be accepted as an auxiliary method of teaching in the same way as we accept films and gramophone records. Instructional recreation of this kind is particularly suitable for the two following school subjects : elocution and music.

Wireless may also be used for technical teaching, but it should be used rather as a means of furnishing supplementary information to the artisan class of society.

Lastly, valuable service may be rendered by broadcasting in the moral training of youth. Certain national or international events, such as the Armistice Memorial Service at the Cenotaph in London, the signing of the Briand-Kellogg Pact, etc., provide material for broadcasts that stir the soul of listeners and give them the impression that they are actually taking part in these ceremonies as they join in this communion of thought and emotions. Thanks to broadcasting, a spirit of fellowship is thus created.

GERMANY

PRIMARY AND SECONDARY EDUCATION

A. — GENERAL REMARKS

1) *The Rôle of School Broadcasting.*

Out of a total number of 55,000 schools, representing 65,000 teachers and 2,500,000 pupils, these broadcasts were taken by 13,000 schools in 1930, and by more than 20,000 in 1931. 83 per cent of these 20,000 schools were rural schools, 10 per cent urban primary schools and 7 per cent secondary schools.

School broadcasts can neither supplant the teacher nor be used for teaching in the proper sense. The living personality of the teacher has no substitute. Nor should any attempt be made to teach pure science but rather to furnish schools with supplementary data and to introduce new elements and features that will enable the pupils to keep constantly in close touch with the movement of ideas, national events and world civilisation. These advantages are of special value for schools situated at a distance from large centres.

2) *Subjects which best lend themselves to this Form of Teaching.*

The 2,000 school broadcasts given in 1931 were distributed as follows :

Music — 480 — 24 % ;
German literature — 440 — 22 % ;
Geography — 200 — 10 % ;
Natural sciences, political economy — 240 — 12 % ;
Foreign languages — 340 — 17 %.

The age and number of children who followed these broadcasts were as follows :

7 years, 40 — 2 %.

* From the report and documents submitted by Dr. K. FRIEDEL, Director of the *Zentralstelle für Schulfunk*, Berlin.

8	—	60	—	3 %,
9	—	80	—	4 %,
10	—	160	—	8 %,
11	—	140	—	22 %,
12	—	660	—	33 %,
13	—	820	—	41 %,
14	—	1120	—	56 %,
15	—	780	—	39 %,
16	—	720	—	36 %,
17	—	520	—	26 %,
19	—	500	—	25 %.

It is to be noted that the discussions held on this question of subject matter are very often of a superficial character and the persons who express an opinion base their conclusions on the results of experiments carried out in a limited field, sometimes in too hasty a fashion. Furthermore, the educational value of these broadcasts depends partly on the method of presentation, in itself open to numerous improvements. It is, however, possible forthwith to establish a scale of values for the subjects chosen for broadcasting. The following distribution is based on the opinions expressed by the provincial school authorities in Germany :

Primary and higher primary schools :

- Music.
- Literature and German culture.
- Geography.
- Nature study.
- Foreign languages.
- Historical dramatisations.
- Citizenship.
- Outside broadcasts.
- Talks on current events (1).
- Home knowledge (Heimatkunde).

(1) This subject, which is an initiation to geography, the natural sciences (fauna and flora), and local history, is particularly suitable for elementary primary schools (Grundschule) from the 2nd. year upwards (7 to 10 years). To be really profitable, lessons in this subject should be given by highly qualified teachers. A large number of teachers have asked that an important place be allotted to these

Secondary schools :

Music.
Foreign languages.
Literature and German culture.
History and civilisation.
Geography.
Nature study.
Talk on current events.

3) *Methods of Presentation.*

It is of the utmost importance that the subject should be presented vividly and in a manner that will make an impression on the children's imagination. The broadcaster should be careful to avoid giving the impression of lifelessness and artificiality by over-labouring his talk. On the contrary, he should speak simply and picturesquely as if ideas were spontaneously arising in his mind and being conveyed in a perfectly natural manner to the children. The ideas expressed should be easily understood.

The principles which govern broadcast teaching can be put into practice only after due experiment, study and methodical discussion. To this end, an investigation committee must be set up, composed of educators having expert knowledge of the different educational and technical questions that arise, wireless experts, school officials and teachers using the broadcasts. Practical advice and directions, based on experience, can be given only by such a homogeneous body of experts working systematically together in this way, while private and casual discussions very often amount to nothing more than an exchange of purely theoretical views.

An investigation committee composed of more than thirty experts has been formed for this purpose in Germany. It had been found that the *lecture*, in the strict sense of the word, was scarcely suitable for school broadcast, and that a more animated and, to a certain extent, dramatised method of presentation must be adopted. The experts therefore examined the various methods possible : dialogues,

talks in broadcast programmes intended for elementary primary schools.

Cf. *Mehr Sendungen für die Grundschule vom Lehrer ERICH KLORS*, in *Schulfunk* : VI, 17 — 1931, pp. 417 ff.

talks, running commentaries, etc. They unanimously agreed that the *direct evocation of the event or object forming the subject of the broadcast* was of capital importance. Instead of broadcasting talks and lectures on men and facts, the aim should be to bring pupils into direct contact with them ; for example, they might listen to the preparations being made for the departure of an ocean liner, to the work going on in a factory, to the men employed in the factory, etc.

In this way, the different methods of presentation were examined and discussed.

Lectures (1). — This method is more suited to educational broadcasts intended for adult listeners. When taken by school-children, broadcasts of this kind are apt to result in fatigue and *ennui* and the pupils then become merely passive listeners, whereas modern teaching calls for constant activity and alertness on their part. This was soon realised and, in consequence, the duration of the lectures was reduced to 15 minutes, or 25 minutes at the outside. Steps were also taken to introduce some of the features of actual classroom work : the broadcaster asks questions, indicates the exercises to be done under the supervision of the teacher. This method, however, is still artificial, for questions and answers should be the direct outcome of open discussion between the teacher and his class. Moreover, such a method is not always compatible with the dignity of the teacher — especially in the senior classes — who finds that he is playing only a secondary part in the proceedings.

The problem is different when the lecturer addresses a group of pupils in the studio who answer his questions. In this case, the lecture takes on the form of a conversation between the teacher and the group of pupils, who represent the other listeners and answer on their behalf.

In order to give more animation to a lecture, it may also be presented in dramatised form, (for certain episodes in history for example) and so hold the attention of the pupils more effectively.

It may be pointed out, however, that although the lecture method of presentation is not generally suitable for

(1) Cf. *Der Vortrag im Schulfunk*, by Professor ERICH HILLER, in *Der Schulfunk*, Heft V, March 1st, 1931, pp. 144 ff.

school broadcasts, there are some subjects for which it can be adopted without any drawbacks, for example, when the lecturer is speaking on events at which he was personally present, eye-witness accounts, travel talks, etc.

It must also be borne in mind that a lecture has its own particular training value ; it teaches the pupils to grasp the main points of a question, to treat it synthetically, thus bringing into play one of the finest activities of the human mind. Provided that they are not given too often, lectures can play an important part in the intellectual training of listeners, even of school-children, but the subject must form part of the general programme of work provided for in the school curriculum. The teacher should prepare his pupils before the broadcast is given and conform to the instructions given in the relevant pamphlet. During the broadcast, the pupils should take notes and summarise the salient points of the lecture. The broadcasts should be followed by open discussions in the classroom, the pupils being asked to retrace the lecturer's remarks and to state the essential ideas expressed. No more active process of mind-building could be found. And, moreover, as the teacher is also a listener, he will find it easier to understand, if not to share, the points of view of his pupils. The combined work of teacher and pupil will consequently be all the more pleasant and fruitful.

As regards the broadcaster, he should speak slowly and distinctly, confining himself to very simple phrases, so as to be understood by all his listeners. It frequently happens that if the lecturer is also a school-teacher, he has in mind only the pupils of his class, who are accustomed to his voice and favourite expressions ; he therefore takes it for granted that he will be understood by all listeners if he speaks before the microphone as if he were addressing his own pupils.

Dialogues (1). — Ideas should be presented vividly. Broadcast dialogues have been found to be particularly suitable and may be either in the form of a debate, a didactic discussion or a conversation between two or three persons.

(1) Cf. *Der Dialog im Schulfunk*, by Dr. Hermann CHRISTIANS and Dr. August LEFFON, in *Schulfunk*, Heft VI, March 15th, 1931, pp. 179 ff.

Interviews may be introduced as a variation from the lecture and dialogue form of presentation. If the interviewer is a clever broadcaster, the interview can easily be made to take the form of a discussion.

In the case of a *didactic discussion*, an expert, an engineer for example, may be invited to describe a piece of machinery with which he is thoroughly familiar. The interlocutor must see that this description does not go beyond the standard of understanding of the pupils on whose behalf he is present in the studio ; he must keep the expert down to this level by asking for explanations from time to time, by asking questions and by calling upon the broadcaster to define certain points of view. To play this part successfully, the interlocutor must have some knowledge of the subject, otherwise the conversation is apt to be diverted from its primary object. If, for instance, an Englishman and a German are exchanging didactic views on the best method of learning English, the German interlocutor should not only have a knowledge of English but must also be familiar with the teaching methods best suited to the German mind. This knowledge is not absolutely necessary when a simple interview is being broadcast.

In the case of a *debate*, truths should, as it were, be made to come to the surface by the conflict of the speakers' opinions. It is, in fact, a discussion in the form of a thesis setting forth the *pros* and *cons* and requiring a certain degree of mental concentration. A discussion may be held on the following question, for example : "Can spiritualism be regarded as a science ?". A dialogue on a subject of this kind demands a certain effort.

Conversations, which are, in a way, an exchange of views, should not aim at bringing different points of view into opposition but at analysing a subject in detail, at developing it and at introducing new facts ; this may be done in a conversation between explorers who each describe in turn an expedition undertaken together...

When should the dialogue be adopted ? It must first of all be observed that the personality of the broadcaster must be taken into account. If he is an eloquent and fluent speaker, he will deliver his talk more in the form of a lecture. If, on the contrary, he is a technician or, more particularly, a craftsman, he must be assisted by an interlocutor who

will play the part of animator. Generally speaking, dialogues constitute the most satisfactory form of presentation for school broadcasts and, in this category, priority should be given to didactic dialogues in which the interlocutor keeps the subject within the range of understanding of the pupils. Debates on political questions between representatives of opposite parties should not be excluded from school broadcasts. Provided that the speakers have the necessary tact and stability of thought, debates of this kind are very often the only opportunity that the pupils may have of hearing an objective exposition of a political problem.

Radio-plays (Hörspiele) (1). — This form of presentation is to be recommended for a definite and self-contained subject, for example: the discovery of X-rays by Röntgen. The "Hörbild" differs from the "Hörspiel" in that it does not require a grouping of events around a central subject but permits of the freer evocation of a series of dramatised episodes. The former method of presentation is of considerable educational value. It has been found that technical questions and nature studies lend themselves far better than is generally thought to this form of dramatisation and cannot be too highly recommended as subjects for wireless teaching.

In the radio-drama it is possible to re-create a period in history for child listeners and, in that respect, it differs from the dramatical readings made by the school pupils. There is considerable discussion as to whether these dramatisations should be specially written for broadcasting or whether it would be sufficient if certain scenes written for the theatre were adapted. Even those who are in favour of plays specially written for the radio agree that use may be made of certain scenes borrowed from the legitimate stage.

When broadcasting fairy tales, they should be chosen from among folk legends and the poetic and naïve expressions to be found in them should be carefully retained. An announcer should introduce the stories and create the

(1) Cf. *Das Hörspiel und Hörbild im Schulfunk*, by Dr. Adolf WASMUS, in *Schulfunk*, Heft VII, April 1st, 1931, pp. 217 ff. Cf also op. cit. Heft X, May 15th, 1931, pp. 323 ff. — Study by Dr. W. SCHÜLLE and Dr. E. SCHOEN.

atmosphere required for a proper appreciation of their action and meaning.

These sketches and dramatisations should stimulate creative activity in the imagination of the children. With a view to ascertaining whether this result has been achieved, the organisers of programmes should not be content with mere correspondence on the subject, they should invite experts to discuss the broadcasts and to express their personal opinions before the microphone. In this way, listeners will hear, as it were, their own impressions stated in actual words.

Didactic dramatisations (Lehrspiel) (1). — The special feature of these broadcasts is that their aim is to teach by reconstructing an episode in history, by inducing listeners to picture a famous site of geographical interest, a scientific experiment, etc. To this end, the broadcast should be not so much a scrupulously faithful reconstruction as an adaptation of the subject to the intellectual standard of the pupils. In dramatisations of historical events, for example, pupils should, in their imagination, be present at an Olympiad or witnessing an election scene in Rome. The scenic element here plays an important part. The listeners should be transported to the scene of action, for example: a barber's shop in Rome, where a conversation is taking place between one of Cicero's followers and one of Catilina's confederates. Scenes illustrating local history may also be broadcast, famous men figuring among the sculpture of a historical monument may be made to speak, etc.

In *geography* broadcasts, the background might be a North Pole expedition, in which imaginary explorers take part, etc.

It is important that these radio-sketches should be directly associated with scenes from real life and that the pupils should be brought into immediate contact with the objects that are being described; thus, the appropriate atmosphere is created and, with a little imagination, the pupils have the impression that they are actually taking part in the scenes to which they are listening.

This method of presentation may also be adopted for the

(1) Cf. *Das Lehrspiel im Schulfunk*, by K. A. FINDERSEN, in *Schulfunk*, Heft VIII, April 15th, 1931, pp. 239 ff., and Heft I, January 1st, 1932, pp. 1 ff.

teaching of subjects relating to science, provided, however, that the subjects chosen are of a nature to stir the imagination of the pupils : the discovery of X-rays by Röntgen, for example, or, in the field of national economy, the daily work of a great banking firm.

In connection with the centenary of a famous man, Goethe for instance, a few outstanding incidents in his life may be staged ; a scene introducing the young poet and his mother may serve to demonstrate the influence exerted by a mother on the development of her child's character.

The *Lehrspiel* (didactic dramatisations) bears such a resemblance to the radio-play that, in some cases, it is difficult to discriminate between the two, but its primary object is to convey a lesson. Statistics and dates should be avoided, the children's imagination should be brought into play. In giving school history lessons, the teacher explains the influence exercised by the Germanic peoples on the Roman Empire. He cites examples of this influence and refers to the works of Tacitus, for example. With the aid of maps, the pupils follow the various stages of the Germanic invasions of Italy, etc. To complete their knowledge of this subject, the genius of these two peoples must be made to confront each other in a concrete and vivid play ; this can best be achieved in a didactic radio-drama.

Outside broadcasts (running commentaries and eye-witness accounts) constitute one of the principal methods of presentation. At the outset, certain technical difficulties had to be contended with but it is now possible to instal one or several microphones to suit all requirements and thus broadcast impressions on the life and activity of a whole town, the work going on in a factory, an artist's studio, etc.

These talks may also be recorded on the spot and the records forwarded immediately to the studio for broadcasting. As time goes on, these records may become of considerable documentary value.

The Rôle of the Commentator (1). — The commentator

(1) Cf. *Das Hörspiel und Hörbild im Schulfunk*, by Dr. Adolf WARMUS, in *Schulfunk*, Heft VII, April 1st, 1931, p. 217 ; also a study by Dr. Kurt ESMACHER, Heft III, February 1st, 1931, pp. 73 ff. and *ibidem* pp. 75 ff. a study by Karl PETZL.

chosen for these outside broadcasts should be constantly on the alert, ready to pick out any characteristic detail or important incident ; he must know how to interpret his personal impressions in vivid, colourful and picturesque language. He should also have expert knowledge of his subject and possess the gift of improvisation. His account of the proceedings should never be read but he may take a few notes to refresh his memory. In short, these commentators should be capable of conveying their impressions and reactions in such way and in such terms that the millions of listeners receive a clear and vivid picture of what is happening before the eyes of the broadcaster. They should not burden their remarks with figures or technical explanations. When the broadcast is of a technical character, the commentator should occasionally introduce a skilled craftsman for example : a mechanic should be chosen to give an eye-witness account of some special feature of the work going on in the factory. When a technical expert takes part in the broadcast, the commentator must see that his interlocutor does not adopt the attitude of a lecturer.

When giving these outside broadcasts, care must be taken to avoid "dead spots". It is therefore a good plan to have two commentators who can relieve and assist each other and convey their impressions in turn. This method allows one of the speakers to collect his thoughts while the other is at the microphone, thereby ensuring that listeners will hear nothing but essential facts. If left to himself, it is often difficult for a broadcaster to avoid relapsing into commonplaces. The principal commentator should therefore make a point of visiting the scene in which the event that he is to describe is going to take place ; listeners will then have the impression that he is perfectly "at home" in his surroundings. The rôle of the second or assistant commentator might be filled by an expert in educational broadcasting.

Commentators should endeavour to establish contact with their listeners. An introduction such as "Dear children" does not give child listeners the impression that they are about to hear anything of particular importance and, in consequence, their imagination is not awakened.

Neither can a broadcaster introduce his subject *ab ovo* ; the children should be prepared for it beforehand. Commentators should also take every opportunity of meeting

teachers and pupils some time before the date of the broadcast in order to ascertain what subjects will be most likely to interest the children and also how much they already know. When broadcasting, the lecturer must not overlook the questions asked him by the pupils.

When several persons are broadcasting together, the broadcast must not be allowed to become a mere artificial conversation. In fact, in order not to confuse the pupils, it is preferable to limit the number of such persons to three.

Commentators should avoid using childish language, otherwise the pupils will not take them seriously. In order that the broadcaster may be able to form an idea of the impression he is making on his listeners, it is a good plan to arrange for a group of pupils, or even a whole class, to be present around the microphone. If these children are to co-operate in the broadcast, the teacher should select his best pupils for this purpose; the commentator will then ask them questions and, if necessary, the pupils may be prompted by the teacher when giving their answers. These answers must not give the impression of having been prepared in advance or learned by heart for the occasion.

These broadcasts are of great educative value; they furnish a means of portraying facts and events in a living manner and of enabling listeners to visualise epoch-making incidents, for example: the departure of a ship. They are mentally transported to the scene of action and their imagination is brought into play accordingly.

Preparation of outside Broadcasts (1). — Having chosen his subject, the broadcaster should place himself in touch with the management of the institution or undertaking from which he is to speak. He should visit the premises in company with a broadcasting expert and note the features and operations that can be described, the different sounds that can be transmitted (the hum of machinery, etc.). He should make sure that, in some cases, his voice will not be drowned by these sounds and, if he is obliged to move from one spot to another, he must be sure that these changes will be effected rapidly without any excessive interruptions in

(1) Cf. *Der Schulfunk*, Heft III, February 1st, 1931, pp. 81 ff. — Study by Joseph KRAHÉ.

the broadcast. He should also choose the craftsmen or other workers whom he will invite to come to the microphone.

Immediately before the broadcast is due to begin, he should test the line in order that the station may call his attention to possible defects in its installation.

The value of broadcasting a commentary on the work going on in a factory is a point on which opinions vary. The broadcaster finds himself surrounded by things which the pupils have never seen and which cannot therefore easily be conveyed to their imagination. In these broadcasts, the commentator will be called upon to make good the incomplete preparation of his listeners and, above all, he must know in advance the class of pupils he is going to address.

Educational outside Broadcasts (Kulturreportage) (1) differ from the preceding type in that they are calculated to provide instructional recreation but also to give living lessons on various fields of social life with the aid of means that are not available to the school-teacher. For example, the pupils may be made to visualise an artist at work in his studio or to hear a dress rehearsal at a theatre ; through the agency of the microphone, they can be brought into contact with the economic life of a given class of society, a group of workers, etc. The essential aim should be to give a clear and living picture of the work proceeding and to give a picturesque description of the different stages of the action taking place. If, for example, the subject chosen is the life of a school or college, the listeners should be made to "see" the old school buildings, the chapel, etc. ; the organ in the latter should be played ; the headmaster should be invited to give a brief talk on the aims of his institution and "cross sections" illustrating the life of his students.

The use of *gramophone records* in conjunction with these broadcasts makes it possible to introduce personalities whose voice could not be heard by any other means and to revive certain characteristic events that occur only very rarely.

Instead of seeking, with the aid of these outside broadcasts, to teach listeners and to disseminate knowledge in a given field, the aim should be to stimulate the desire for

(1) Cf. A Study by Dr. Fritz WENZEL, in *Schulfunk*, Heft II, June 1st, 1931, pp. 353 ff.

self-instruction, to make children see rather than think, to make them ask questions and to raise rather than to solve problems ; in short, to arouse their intellectual curiosity.

Put in short (1), it may be said that lectures, which are apt to be too fatiguing for child listeners, should be broadcast only on rare occasions. There are, however, some subjects for which this form of presentation cannot be avoided. Moreover, a lecture possesses a didactic value to be found in no other form of broadcast. It should, therefore, not be entirely excluded as some authorities have proposed.

Dramatisations, which give the listener the impression that he is actually witnessing what the broadcaster is describing, are, in the opinion of school-teachers, eminently conducive to good work by pupils. Enthusiasm and imagination are kept alive. This form of presentation is suitable chiefly for pupils of 10 to 14 years of age.

The *dialogue*, in which sustained action is provided by the parts played by the different interlocutors and by the interweaving of opinions, is held to be an excellent method of presentation by the majority of experts. *Didactic dialogues* have been proved by practical experience to be particularly suitable for educational broadcasts in general. Other forms of dialogue should be adopted chiefly for broadcasts intended for the senior pupils of secondary schools.

Running Commentaries. — In the opinion of many experts, this form of presentation is destined to play the leading rôle in school broadcasts. This is particularly true when we consider not so much the method itself as the principle underlying it, namely, to convey to the pupils the elements of real everyday life. Up to the present, however, it has been very difficult to find broadcasters possessing all the necessary qualifications. Furthermore, there are certain events that cannot be broadcast, for example, the sitting of a court.

The ideal would be attained if it were possible to transmit scenes from the economic, political and social life of the country without having to resort to the commentary. In this respect, the "Lehrspiel" (didactic dramatisations), in which scenes are evoked with the object of conveying a

(1) Cf. Comprehensive study summarising these considerations, by Professor Hans MANN, in *Schulfunk*, Heft II, January 1st, 1931, pp. 357 ff.

lesson, might very well become the form generally adopted in the future.

Teaching of Languages (1). — Strictly speaking, the intention here is not to teach languages by radio in schools where this teaching, in the true sense, is given in the classroom, but to supplement these lessons by practical exercises. Circumstances are different when we consider language courses for adults.

Broadcasting and the Linguaphone. — In former years, the linguaphone was used for these practical exercises. Broadcasting will not supplant this instrument, for the linguaphone possesses certain advantages which are peculiar to it. It can be used as and when desired; programmes can be planned to suit current requirements and certain texts can be repeated indefinitely and without the slightest variation. The record, however, can be used only for lessons in pronunciation and rhythm. These lessons must be prepared long beforehand and are, in consequence, in the nature of stereotyped talks. Broadcast conversations, on the contrary, are more likely to convey an impression of a natural and living interpretation of the flow of ideas exchanged between the instructor and his assistants. Besides, in this kind of exercise, the text, the vocabulary, phonetics and the rhythm of phrases can be better expressed in relation to the individual needs of the peoples for whom the lessons are designed. In reality, wireless broadcasting and the gramophone supplement each other. Records should be used more for phonetic exercises on texts specially prepared for school use and for model recitations. Broadcasting, on the other hand, should be used preferably to enable pupils to hear spontaneous and living conversations, the modern construction and pronunciation of a language and scenes from everyday life with appropriate settings. For it must be remembered that the object of wireless talks is not merely to teach a language but also to familiarise listeners with the psychology and the customs of the people who speak it. Hence, a foreign broadcaster may be regarded as representing the social culture of his country.

Lessons in modern languages are, from the point of

(1) Cf. *Rundfunk Sprachunterricht*, by Dr. Karl FRIEBEL, Verlag Julius Beltz in Langensalza, pp. 42 ff.

view of schools, practical exercises rather than a form of teaching proper, and for this reason they should not be given too frequently. One lesson per week in English or French will be sufficient. The difficulty lies in adapting these lessons to suit the needs of the different grades of pupils ; a difficulty that does not arise in regard to records, which can be chosen at will. This does not imply that each lesson should be designed for a specific purpose, for to do this would be to the detriment of the community of listeners. Moreover, school programmes and vacations do not always coincide. Certain classes may sometimes find it impossible to take a lesson. An endeavour should therefore be made to plan courses of lessons that can fit in with the work of certain classes of pupils and, at the same time, give a broader outlook in a special domain.

Experience has shown that it is preferable to provide for four separate courses of lessons, so that during the month each course can be given once. No attempt should be made to make the lessons link up with one another ; it is preferable to concentrate on the choice of subjects, each lesson constituting a self-contained whole.

Course 1 : The vocabulary and expressions should be very simple and suitable for beginners : anecdotes, fables, letters, familiar scenes and proverbs.

Course 2 : Expressions and phrases used in ordinary conversation should be employed to describe daily life, such as can be found in conversation handbooks, newspapers and magazines.

Course 3 : Descriptive talks on the country whose language is being studied, the life of the people, their customs, mentality, social and religious life.

Course 4 : Talks on the literature and art of the nation.

A fifth course might be organised as a sort of connecting link between the above ; for example : the broadcasting of music accompanied by descriptive commentaries. These lessons could be taken by all the pupils.

Examples of Subjects for Broadcasts :

Course 1 : "Un paresseux spirituel" — a few axioms as expressed by M. de la Palice.

Course 2 : The art of letter-writing. How to shop.

- Course 3 : France — her situation and national resources ; duties of a citizen.
- Course 4 : A page from the *Bucoliques* of Jules Renard. The prose of Voltaire (readings of extracts).
- Course 5 : French folk songs.

In order that these lessons may be really profitable to listeners, the foreign broadcaster must have the support of a German teacher, who will act as interlocutor and represent the point of view of the pupils, keeping the conversation down to their level of comprehension. This German expert should also collaborate in the preparation of the programme and act as technical adviser to the foreign instructor. Most of the lessons will therefore be presented in dialogue form as in the adult courses (1) but will differ in one respect, namely : they should constitute practical exercises and not aim at teaching in the true sense of the term. Although less conspicuous, the part played by the inter-

(1) Thanks to these dialogues between a foreign broadcaster speaking in his own tongue and a German interlocutor, pupils not only receive a lesson in a foreign language but also hear a modern language spoken by a person who, as it were, incarnates the genius of that language and represents the civilisation of the country in question. For his part, the German interlocutor represents the German mind and will see that the broadcaster keeps to the intellectual level of his listeners. In the course of the conversation, he should ask such questions as might be asked by the pupils. He should act as adviser to the instructor. The foreign broadcaster should, moreover, possess a good knowledge of German and be familiar with German civilisation. On these lines, the conversation conducted before the microphone sounds more spontaneous and less artificial and is less monotonous than a talk by one person. The listeners thus imagine that they are taking part in the conversation. Presented in this form, the dialogue takes on a didactic character (*Lehrgespräch*). It is important therefore that listeners, at least adult listeners, should have a text to which to refer, thus enabling them to prepare and revise the lesson. This text should be drawn up by the broadcaster in collaboration with the German expert. (The text should not be a mere manual containing isolated passages but a libretto or guide with which pupils may follow the different stages of the lesson ; it should contain scenes taken from every day life, expressed in simple and current language. These analysed texts are developed by the lecturer and serve as a basis for the lessons).

locutor is no less important. Conversations may also be organised between three persons.

Another excellent method of presentation is to give, in connection with musical recitals, a descriptive talk in the form of a conversation animated by the impressions produced by the music and in which ideas seem to arise spontaneously as in an improvised conversation. This form of exercise may be used very effectively for schools since the object in this case is not to teach but to drill the mind. It is even more vivid and, above all, more natural than the dialogue.

4) *Adaptation of Broadcast Lessons to School Curricula* (1).

Choice of Subjects. — The aim of school broadcasting is not to provide lessons that can be followed by every class in a school but to allow the pupils to listen to certain broadcasts as and when required. The broadcasts should therefore not constitute lessons in themselves but should supplement the classroom lesson. *It is for the teacher to choose*, from among the wireless programmes communicated to him in advance, the subjects best suited to his pupils. Experience has shown that the results obtained by these broadcasts depend not only on the value of the programmes broadcast but also on the aptitude and preparation of the listeners ; the school-teacher should therefore co-operate as much as possible with his pupils in making this selection.

This choice is indispensable for several reasons : pupils take an interest in these broadcasts only if they are not called upon to listen to them too often and they would soon tire of wireless lessons if they were obliged to take several every week. Furthermore, these broadcasts should correspond to the teaching which the pupils have already received and serve as a starting point for a definite course of study.

In choosing his programmes, the teacher should not allow himself to be guided by what pleases him most but by what is most suitable for his pupils. The choice of sub-

Cf. Wie weit sind wir im Schulfunk ? by Professor Hans MANN, of the Zentralstelle für Schulfunk, Berlin, 1931, Verlag E. S. Mittler. pp. 21 ff.

jects may also be determined by two factors : the teacher may either pick out a talk that can serve as a foundation for later work or he may prefer to complete, with the aid of these broadcasts, the lessons which he has already given in the classroom ; or, lastly, he may wish to combine a broadcast talk with a lesson, for example : the recitation of passages from literary works, etc.

Subjects which do not mesh in with the school curriculum should be avoided. If the broadcasts are taken too frequently and if they are not sufficiently adapted to the school programme, the inevitable result will be a deterioration in personal effort and the encouragement of superficial methods of working on the part of the pupils. This does not mean, however, that running commentaries on particularly interesting current events should in all cases be excluded, such as, for instance, the voyage of the Graf Zeppelin. When such broadcasts are avoided, there must be some good and appropriate reason for taking such a decision.

5) *Preparation and Utilisation of Talks : Active Teaching.*

These three tasks : the choosing of suitable subjects, the preparing of pupils for these broadcasts and the utilising of the talks for later work are so closely connected one with the other that they very largely determine the results obtained.

Firstly, in regard to *the preparation of programmes by the broadcasting organisations*, it is essential that these organisations should work in collaboration with educators and the school officials. In Germany, every broadcasting company has appointed a committee of educational experts, the members of which are nominated in agreement with the school authorities. These committees carry out systematic experiments and investigations as to the contents of the programmes and the best methods of presentation, the planning of the programmes according to the needs of the different grades of schools, their position, the age of the pupils, the choice and upkeep of receivers, conditions of reception in the classrooms, etc. The committees are also responsible for the preparation and publication of pamphlets ; they organise talks for teachers and discussions with educators, and make arrangements

for the *storing of model documents* and gramophone records relating to the different subjects. These records are of considerable value ; they make it possible for pupils to hear, at any time, the voices of famous people and talks by eminent experts or educators.

Training and Qualifications of Broadcast Lecturers. — The broadcast lecturer should, in the first place, have a knowledge of the technique of wireless ; he should be accustomed to speaking before the microphone and should himself have listened-in to broadcast lessons in order to judge of their effect on pupils. He should also be familiar with the psychology of the pupils he is addressing. In other words, it is essential that the broadcaster should have had practical experience of classroom teaching. Very often, when a lecturer is speaking before the microphone for the first time, he has the impression that he is talking into space. Nothing could be more disastrous. The lecturer should therefore be brought into contact with his listeners, at least with some of them. This contact will not only stimulate and facilitate his efforts but will also be of immense advantage to the listeners themselves. The broadcaster should make a point of speaking slowly and distinctly, without hastening his delivery ; he should seek to impress his listeners not only by a masterly handling of his subject but also by his personality ; he should feel that he is sharing his feelings and ideas with his listeners. Preference should be given to the speaker who knows how to stir the imagination rather than to the learned and methodical professor ; to the energetic lecturer who calls forth points of view and raises problems which the pupils will study in the classroom, rather than to the pedagogue who endeavours to solve these problems with scrupulous accuracy.

Preparation of Pupils and School-Teacher. — There can, of course, be no question of explaining a subject in all its details, such a course would render the broadcast practically useless. Under no circumstances should the talk be allowed to enter the children's mind as a foreign body enters a living organism. Their minds and hearts must therefore be prepared to receive this teaching. The pupils must also be supplied with maps, pictures, films and note-books in order that they may derive the fullest possible benefit from the broadcast. All necessary instructions

should be given beforehand in the pamphlets. The programmes and instructions regarding the preparation of the pupils for broadcast talks should be issued well in advance. The pamphlet might give the programme for the whole of the ensuing period of three, or even six, months. This collaboration between broadcasters and teachers may be facilitated by the organisation of permanent educational lectures and by the holding of special "study days" in the different school areas.

There is no need to devote an hour specially to this preparation. It will be quite sufficient if, at the beginning of the week, the teacher guides his pupils toward the subject of the forthcoming talk in the course of the normal class work.

Activity of Pupils and Teacher during a Broadcast. — The pupils should be seated in a semi-circle, near the loud-speaker. Each should be given two sheets of paper, one for noting words that they have not understood (the senior pupils adding a few remarks for future reference) and the other for jotting down the principal features of the talk. It will be found that children will at first experience considerable difficulty in taking notes; the teacher should therefore guide them by writing certain words and sentences on the blackboard, explaining after the broadcast why he did so. The very fact of being obliged to take notes compels a pupil to concentrate his mind on the subject. The broadcaster should also ask questions and invite the children to answer immediately. This is an excellent method of developing the pupils' mental activity. There is, however, a danger that it may, in some cases, lead to the repression of the other psychic faculties of the pupil by compelling him to take notes of what he has heard. The same drawback may arise with regard to maps, pictures, exhibited in the classroom. If adopted with discretion, these methods will always be effective although they may not always be indispensable; the essential point to remember is that the talk should stimulate the children's imagination. The teacher, for his part, should summarise the most prominent features of the talk on the blackboard and then transcribe them in a book which will serve as an "aide mémoire" in the discussion that follows the broadcast. It will be seen, therefore, that these wireless lessons make greater calls on the activity of the teacher than an

ordinary classroom lesson ; he must intervene at every moment, keep his class on the alert, especially the pupils who are naturally inclined to adopt a passive attitude.

People who criticise school broadcasts on the ground that they encourage passivity sometimes confuse apparent activity with intellectual activity. The latter, when exercised in its highest and noblest form, takes place in silent meditation.

Utilisation of Broadcast Talks in Connexion with Classroom Work. — These talks may be incorporated in the methodical teaching of a particular section of the school curriculum ; this is not always easy, however, as it is impossible to judge of the nature and scope of the talks until they have been followed and evaluated as a whole. They may also be made to serve as the crowning finish of the teaching given on a particular subject, but this applies only to a limited number of subjects, for example : art and music. Lastly, these broadcast lessons may very frequently serve as a *point de départ* for initiating children to a certain number of questions which, strictly speaking, have no direct connection with the subjects figuring in the school syllabus (1).

After the broadcast has ceased, the pupils will naturally ask for certain supplementary explanations. These may be given in the course of an exchange of views between the teacher and his class and should as a rule occupy no more than 15 minutes, whether the teacher furnishes a synthesis of the talk or merely answers the pupils' questions. The pupils will frequently be set an exercise on the subject of the talk ; their papers should be forwarded to the broadcaster for his consideration. It is, in fact, important that a link of this kind should be established between the lecturer and his listeners. The latter should write down their impressions, mention the points which they have not understood and so make interesting suggestions. The lecturer will thus be able to judge of the effect of his talk and realise its weak points. This contact with his listeners will be a great encouragement to him in his work. He may also reply through the microphone to the questions asked

(1) *Unterricht vorm Lautsprecher. Ein Beitrag zur Schulfunkmethodik, vom Lehrer Kurt RIEMANN, in Schulfunk VI., 18-1932, pp. 445 to 447.*

by his listeners and, to encourage a spirit of emulation, he may, when the question is of especial interest, mention the name of the school or even that of the pupil whose question he is answering.

A *group of pupils* may also be invited to take part in the broadcasts and to play short sketches which they have written themselves. The aim of these broadcasts is not to produce perfect plays but rather to give legitimate satisfaction to the pupils and their parents. Moreover, these broadcasts organised by children create friendly relations between the different schools, promote the community spirit and stimulate school life.

Too great stress cannot be laid on the necessity of establishing, in every country desirous of organising these educational broadcasts along systematic lines, a *study and investigation centre* that would prepare the programmes, facilitate the preparation of lectures and listeners, and ensure liaison between the broadcasting companies and the school authorities. *The formation of such centres is a condition sine qua non for the success of school broadcasting*. In Germany, this work is undertaken by the Zentralstelle für Schulfunk, which was formed on the initiative of the Prussian Ministry of Public Education and the Reichsrundfunk Gesellschaft. Its duties are as follows :

- 1) To centralise and exchange results of experiments in educational broadcasting ; to facilitate and organise methodical investigations in the field of education and school broadcasting technique, in collaboration with the school authorities and the broadcasting companies.

- 2) To furnish information on matters relating to school broadcasting. An information service has been specially organised for this purpose.

- 3) To organise working meetings and classes for initiating school teachers to school broadcasting problems. These courses are arranged in collaboration with the educational departments.

- 4) To prepare and publish the pamphlet *Der Schulfunk* ; this pamphlet appears fortnightly and gives the programmes of the broadcasts, with a methodical statement on the nature and object of the talks and the method of preparing listeners. The publication constitutes a permanent link between the schools and the broadcasting organisations.

5) To plan the educational broadcasts given throughout Germany and to co-operate with the transmitters in the execution of these programmes.

6) *Verification of Results.*

Official enquiries, organised by the school authorities, have been conducted with a view to evaluating the results obtained. We may mention, by way of example, the investigation undertaken by the Ministries of Public Education of Prussia and Saxony (1). Another method of verifying results is to organise *conferences* in collaboration with the local education officials.

On the whole, it may be stated that school broadcasting has definitely established itself in German schools. The place which it occupies in the school programmes will become still more important as the educational value of these broadcasts increases. If school broadcasting has not always produced the results that might reasonably be expected, the explanation must be sought in one or other of the following reasons :

1) The methodical training of the teachers is not yet sufficiently advanced. There are therefore certain "blind spots" in these broadcasts.

2) The schools are also affected by the economic crisis. They are now receiving smaller grants and are sometimes unable to purchase receivers.

3) The conditions of reception are sometimes faulty. Too great emphasis cannot be laid on the importance of installing first-class receivers in the schools. There is a growing need, therefore, for technical control committees, the members of which would advise the school authorities on the choice of receivers, their installation and manipulation. These experts should be chosen from among educators, school officials and technicians. The question here arises whether it would not be preferable to instal different types of receivers according to the situation of the school and to counteract local interference. Allowance for these different conditions should perhaps be made in the allocation of grants. It should also be possible to obtain special terms

(1) Cf. *Der Stand des Schulfunks in Preussen*, by Dr. Karl FRIEBEL, in *Schulfunk*, Heft XII, June 15th, 1931, pp. 387 ff.

for the purchase of material used in the schools. However this may be, it is imperative that measures be taken to remedy the somewhat chaotic state of affairs existing in regard to this matter and that a system be devised for inspecting the wireless apparatus used by schools. To this end *responsible committees* should be appointed. *The results obtained from educational broadcasting are, in fact, largely dependent on the quality and state of upkeep of school receivers.*

**B. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS
AND PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS**

The spirit of understanding between nations has been promoted in German schools, thanks to the educational talks on history, geography and national customs, recitals of the works of foreign composers and, particularly, by *talks devoted to the study of foreign languages*. These talks are given not only to facilitate the study of languages but also to disseminate knowledge of the civilisation of the peoples speaking them. In Germany, they are given in the form of a conversation between a foreign instructor, who represents the mentality of his country, and a German interlocutor, who sees that the broadcaster's remarks are suited to the mentality of German listeners and are of a nature to give them satisfaction (1). With the assistance of the German expert, therefore the broadcaster chooses subjects that will serve to illustrate the civilisation, social life and customs of his own country, and in such a way that listeners are taken in progressive stages from home life in Germany to that of the foreign country in question.

This initiation may be effected in three complementary series of talks. In the first series, the broadcaster should give brief sketches of the daily life of his listeners as compared with that of the foreign people he represents, taking care to express himself in simple terms. Later, he should give a general survey of the principal features of every day life abroad. In this way, the listeners will acquire a sufficient knowledge of a language to understand the most notable manifestations of the genius of the country.

(1) Cf. *Rundfunk Sprachunterricht*, by Dr. Karl FRIEBEL.

This initiation constitutes the third stage, in which outline talks should be given on the different intellectual fields of the foreign nation : its literature, art, religion, customs, institutions, etc., supplemented by comparisons with the corresponding manifestations of German culture.

An endeavour should be made, at the same time, to organise exchanges of correspondence between German listeners and foreigners. Upon the completion of this series of talks, arrangements should be made for visits abroad and individual or collective interchanges of school-children.

Another method would be to give, in connection with these foreign visits, a series of talks in which the German teachers and pupils are invited to exchange their impressions before the microphone.

It is also possible to organise German talks on the civilisation, history, customs, art and literature of foreign nations (the relevant pamphlets should give extracts from the masterpieces of their great poets); to arrange musical programmes of the works of their master musicians and folk songs, to relay the musical programmes broadcast by foreign stations, etc.

The German transmitters also broadcast talks on major international problems and on the outstanding events in international life, as well as on the activities of the League of Nations. These broadcasts, with the exception of the foreign language lessons, are nearly always given in the form of talks lasting from 25 to 30 minutes. They are prepared in the same way as the ordinary broadcasts, that is by close collaboration between the wireless organisations and the school authorities.

Lastly, the Reich Government has appointed a committee specially entrusted with the duty of controlling broadcasts bearing on questions of national and international politics.

GREAT BRITAIN *

The experiments in school broadcasting carried out in 1923 by the British Broadcasting Corporation (B. B. C.) and in 1927 by County of Kent Education Committee in collaboration with the former (1) demonstrated the necessity of establishing a *central body for methodical research*, organised on a representative basis.

This object was achieved in 1929 when the B. B. C. was constituted an autonomus institution. It was also at this date that the Central Council for School Broadcasting was established. This Council, as at present constituted, is representative of the Board of Education, the Local Education Authorities, the National Union of Teachers, the Secondary Schools Associations, the Independent and Preparatory Schools, the Training College Association, the Scottish Central and Local Authorities and Teachers, and of the Ministry of Education of Northern Ireland.

Its activities may be summarised as follows :

1) At the studio end, it plans the use of the hours (an average of two each afternoon) allocated to school broadcasting. It investigates the place of broadcast lessons in the teaching of various subjects in the curriculum, and the desirability of school broadcasts unconnected with the ordinary curriculum (news bulletins, national ceremonies, etc.). It also investigates the question of broadcast teaching technique, the choice and training of broadcasters and collaboration with teachers.

2) At the listening end, it examines problems of a technical character ; it devises means of obtaining systematic reports from the Local Education Authorities, H. M. Inspectors of Schools and Teachers on the conduct and utility of broadcast lessons. It investigates administrative problems

* Report drawn up on the basis of the memorandum and documents submitted by the Central Council for School Broadcasting, at the request of the British National Committee of Intellectual Co-operation.

(1) Cf. *Report of a Special Investigation in the County of Kent during the year 1927*. Published by the Carnegie United Kingdom Trustees, Dunfermline 1928.

and teaching problems arising out of school broadcasts. It acts as a medium of research and publicity, by co-operation with the selling organisation of the B. B. C. and by distributing pamphlets free to all schools on the list.

3) It exercises general supervision over the preparation of these school pamphlets and recommends steps for improving their distribution.

4) It arranges for the formation of Area Councils and other forms of local help to act under the supervision of the Central Council. It administers the staff of the School Broadcasting Section of the B. B. C.

Advising the Central Committee, there are special subject committees whose duty it is to examine these questions in relation to each section of the curriculum. Thus, there are such subject committees in existence for English, Geography, History, Modern Languages, Music, Science and Natural History.

The Central Council has also advisory sub-committees on Secondary Schools and Technical Education. There is further a special sub-council for Scotland, the general educational administration of which comes under a separate government department.

The first requisite for a successful broadcast lesson is a clear reception and in order to give assistance in overcoming obstacles of this nature a technical sub-committee has been established. This body is engaged in the effort to devise proper standards of reception and it is expected that before long it will be in a position to furnish advice on the provision and maintenance of receiving apparatus.

Each of these sub-committees is composed of specialists in the different subjects taught, of representatives of professors and teachers taking the broadcasts, and members of the Central Council.

There are at present more than 4000 schools taking broadcast lessons regularly, 80 per cent of which are elementary schools. There are also 1861 elementary and 234 secondary schools who listen occasionally to broadcast talks.

Although the present situation of the investigations does not permit of the formulation of any valid conclusions, the Central Council thinks that the following general recommendations may already be formulated :

1) The primary condition to be fulfilled to ensure that broadcast lessons may be followed with the maximum

advantage is good reception. The technical committee's opinion is that, having regard to present developments, it is possible for any school to obtain for an expenditure of from £12 to £20 a quality of reception which will avoid any strain upon the listening class.

2) The loud speaker should be placed in such a position as will ensure that every pupil can hear the lesson in comfort. This may necessitate the rearrangement of the normal position of objects in the classroom (1).

3) The broadcast lesson is a supplement to the efforts of the teacher, justified only in so far as it supplies information and mental stimulus beyond the ordinary resources of the school. Consequently, no attempt should be made to use the whole of the broadcast programme indiscriminately.

4) Before deciding which parts of the broadcast programme are to be used, the curriculum and time-table of the school should be considered both in its general character and special needs.

5) The aims of the broadcast course should be studied as outlined by the appropriate subject committee in the preface to the pamphlet issued in connection with the course.

6) The arrangements for the provision of maps, black-board notes, etc., indicated in the pamphlets should be followed in detail.

7) The broadcast lesson is a co-operation between the teacher in the classroom and the teacher at the microphone. The former should help the latter by encouraging the children to answer questions, etc.

8) Children find it hard to take notes during a broadcast lesson. Note taking should therefore be limited to a minimum.

9) The classroom teacher must recall and revive the transient impressions produced by the broadcast talk. Revision is essential to all good teaching.

10) As there is no learning "without tears", questions and exercises play an important part in such revision of broadcast lessons, and during this revision there should

(1) See *Receiving Sets for Schools and Adult Education Organisations*. — B. B. C. publication.

be encouragement to the children to write or make things according to their own ideas.

11) Teachers should not hesitate to send in considered criticisms to the broadcast teacher, who, it must again be emphasised, should regard the school teacher as a colleague. This is the best means of gauging the value of the lessons, though propaganda at annual teachers' conferences is also some help. But, in general, the value of these conferences lies in the fact that teachers are thereby persuaded to use these new methods.

SUBJECTS TAUGHT IN SCHOOL BROADCASTS (1)

A. — HISTORY (2)

The aim and purpose of broadcast lessons is not to teach in the strict sense, as is done by the school teacher, but to supplement knowledge by evocation and revival, by means of sketches and vivid accounts of striking events in history and by general surveys of the evolution and interlocking of ideas that have led to modern civilisation. This will be readily understood if we glance at some of the subjects which have been dealt with up to the present : sketches of English history ; the great empires of the past ; history and folklore ; local history ; social life in England in the middle ages ; the life of children in the middle ages ; the pioneers of present-day Europe ; the origin of English laws ; the British navy ; an outline of European history ; "Tracing history backwards", etc.

These talks are designed respectively for the senior pupils of elementary schools, the pupils of higher primary schools and for pupils of intermediate grade schools.

(1) Cf. *Some Problems of School Broadcasting, reviewed after three Years Experience*, published by the Central Council for School Broadcasting, pp. 6 to 10.

(2) Cf. *The Evidence regarding Broadcast History Lessons*. Inquiry Pamphlet No. 1, issued by the Central Council for School Broadcasting, 1930. Results of investigations carried out by the Sub-Committee for the Teaching of History.

Method of Presentation.

To be effective, the broadcast lesson should make a personal impression on the pupil and stir his imagination in such a way that he retains the feeling that the broadcaster has been addressing his remarks individually to him. Historical facts should therefore be presented in dramatised form, in a language familiar to the pupils. If the broadcaster confined himself to giving a mere didactic statement, the results of his talk would be far less satisfactory than those obtained by the teacher in the classroom. In other words, the aim should be to reconstitute historical episodes and to make them as vivid as possible. Consequently, intricate detail should be avoided and left to the school teacher. The broadcaster should, on the contrary, group the elements of his subject around a personality or current event ; failing this system, the talk will arouse no interest on the part of his listeners. The school teacher's task is to teach history ; that of the broadcaster is to revive and reconstitute history.

Such history talks have been given with *good result*, as borne out by the inquiries conducted in 1927, 1928 and 1929. The teachers who used these broadcasts unanimously recognised the value of this supplementary tuition.

For the purpose of gauging these results, a series of test papers were given in 1929 : the broadcast teacher, speaking from the studio, dictated a number of questions to the pupils, who wrote down their answers immediately. The papers were then forwarded to the station. This test was in no way whatsoever intended to be a competition ; such a conception must, on the contrary, be rigorously set aside. The sole object was to enable the investigator to obtain replies which he could compare with those obtained on identical points from pupils who had not followed the broadcasts. An impartial expert was then asked to examine the replies and to determine, in so far as was possible, the share to be attributed to broadcasting lessons in the history training and general culture of the pupils who had taken the course.

Of the 1190 children who took part in this test, more than 900 were attending primary schools, while only 60 were secondary school pupils. This inquiry showed that, for the talks on mediæval history in particular, the pupils'

interest had been stimulated by these broadcasts. Thanks to this system of dramatisation, mediæval life was rendered so familiar to the children that, in their imagination, they could draw comparisons with their own daily life. The inquiry also showed that, in general, the pupils had been able to incorporate the broadcast course in the classroom lessons, with the result that the two supplemented each other, thus helping the children to visualise the episodes presented to them through the microphone in illustration of what they had learned in the classroom.

B. — GEOGRAPHY (1)

At the outset, an endeavour was made to give, in addition to travel talks, a series of addresses providing geographical instruction proper. It was soon realised, however, that this instruction could best be given by classroom teachers and, moreover, that the aim of school broadcasting was not to include in its programme subjects which teachers could handle themselves. It was therefore decided to limit broadcast geography to *travel talks*. In this field, the services that can be rendered by school broadcasts may be regarded as unique. In fact, they alone can make it possible for a large number of children to hear the voice of a person who has lived his story, who possesses first-hand knowledge of the countries described, knowledge which differed from ordinary book learning and the information given in a school text-book. For example, an explorer can be invited to speak on his recent discoveries or a pioneer adventurer on his life in the jungle. When it is desired to organise a broadcast on the life and homes of different peoples, travellers who have lived in these surroundings should be invited to come to the studio. These talks provide the listeners with a vivid background to, and will shed new light on their ordinary studies in geography.

The broadcaster should relate his personal experiences and present his subject vividly, in a manner that none but a person who has actually lived these experiences could

(1) Cf. *The Evidence regarding Broadcast Geography Lessons*, Inquiry Pamphlet No. 2, issued by the Central Council for School Broadcasting 1930. Results of investigations by the Sub-Committee on the Teaching of Geography.

acquire ; he should be careful to avoid giving information that can be found in any text-book. He should concentrate on detailed descriptions of national life and customs, endeavouring thereby to broaden the intellectual outlook of his pupils, casting new light on geography and making it more interesting and attractive. Talks of this nature, especially those on the life and customs of the different peoples have met with considerable success.

Some of these talks can be made to fit in with the current classroom studies. They should, however, be regarded as supplemental, for a travel talk can never embody more than a few aspects of a geography lesson given in the classroom. Each talk should constitute a whole, in order that the teacher may have an opportunity of choosing the subject which he considers most suitable. On the other hand, the talks should be arranged upon a definite plan and in a carefully thought-out sequence, so that in rural schools and other schools where specialised teaching of geography is not available, the broadcast lessons may be framed up with a scheme of study prepared in accordance with local needs and opportunities by those responsible for the instruction.

Different views may be held by school-teachers as to the most profitable way of taking these lessons. They all agree, however, that to be really beneficial they should serve as a foundation for subsequent classroom work, for example : written exercises, the reading of specially recommended text-books, etc.

Geography talks may be classified under two heads :

1) *Simple travel talks*, easy to understand and given in *narrative form* with references to maps and pictures, suitable for children of 11-14. Films may also be shown, to illustrate the regions described in the talks.

The broadcaster should refer to maps to indicate where the area he is speaking of is situated ; he should base his talk on the pictures which the children have before them ; he should avoid excessive detail such as names of places, etc., and speak more of the climate, the relief and the customs of the country ; he should use simple words and ideas and must not give the impression that he is talking down to the children's level.

As regards the pupils, they should follow the talk on the classroom map. Should they also be required to take notes ? Some recommend note-taking but the majority of

the organisers of these travel talks are of the opposite opinion. They contend that when a broadcaster is really interesting and can hold his audience, note-taking is entirely forgotten. Furthermore, in attempting to jot down their impressions, children, especially children of this age, are inclined to concentrate their mind on a point of detail and to lose the general trend of thought. It would seem therefore that, in so far as these broadcast lessons are concerned, note-taking distracts or, at least, concentrates attention at the wrong time. A far better system is to spend a few minutes after the broadcast in retracing the main points of the talk and in answering the questions that will surely be asked by the pupils.

2) There is also room for talks for more advanced pupils of 15 and upwards. The aim of these talks should be to give surveys and first-hand information on certain parts of the world. These talks might obviously be given by an explorer who would describe what he has seen and discovered. Lastly, geography broadcasts can also be given by the geographical expert who has practical experience of the regions chosen as the subject of the broadcast. It is suggested that these talks should be more or less on the lines of the Royal Geographical Society lectures and addressed to secondary school pupils ; if the school curriculum were already too full, the talks could be given after school hours, say at 4.15 p.m.

C. — INTRODUCTORY COURSES OF MUSIC (1)

Broadcasting may contribute in three different ways to the teaching of music in schools : a) Schools without adequate resources for the teaching of music are able to take these lessons as a real course. b) Schools which already follow a full course in music are furnished with an opportunity for listening to good music and the pupils may develop their power to read, analyse and construct simple melodies. c) It is possible to organise concert lessons and gramophone recitals of the best music, chosen with the age and inexperience of the listeners in mind.

(1) Cf. *Music Lessons*, by Sir Walford DAVIES. Scholar's Manual, 1928-1932, published by the Central Council for School Broadcasting.

The object of these lessons is to supplement the work of the School Music-teacher in the following five ways :

- 1) To increase the knowledge, love, and practice of rhythmic melody.
- 2) To accustom scholars to the thought of melody as a natural language.
- 3) To enable them to read a simple melody or rhythm, or both, at sight.
- 4) To release and develop the pupils' own powers of tune-building.
- 5) To expound and to give an opportunity of appreciating a few chosen classical works each session.

The lessons, distributed over a whole year, are divided into two courses : a junior and a senior course.

1) *Elementary Course :*

The lessons for juniors consist of exercises in rhythm, sight reading, transcription, song-singing with the playing of simple classical pieces.

2) *Advanced Course :*

The primary object of the senior course is to offer pupils an opportunity of appreciating the masterpieces of great musicians. They are also given practice in group singing, reading, phrasing, annotation, etc.

In order to permit of combined singing by the junior and senior pupils, this part of the course should be arranged to suit the requirements of these two sections of a school. These singing lessons have proved very popular, and teachers generally ask for the reservation of an important part of the musical programmes for these lessons. They also ask for the frequent broadcasting of well-known musical phrases or passages selected from the works of great composers. These phrases are a valuable aid in improving the pupils' ability to play music at sight.

Reference to written music is indispensable for a proper understanding of these lessons. The manual provided contains the words and music of songs, selected songs, notes on the purpose and scope of each lesson, comments on the music played during the broadcast, characteristic musical phrases, a guide to musical notation, etc. These courses also necessitate close collaboration between school-teachers and the organisers of the broadcasts, otherwise the lessons

may be beyond the pupils' range of understanding. For example, in the lessons on rhythm, if the rhythm is rendered too rapidly, the pupils will be unable to follow it. The organisers must therefore be accurately informed on the standard of ability of the listeners and design the courses accordingly. Certain broadcasts might with advantage be devoted to song-singing and to short pieces of music written by the pupils themselves during the year; this broadcast might be given as the final lesson of the series.

Finally, concerts lasting say 30 minutes may also be organised, each being devoted to the rendering of the simpler movements of classical works. They should include songs sung in turn by soloists and choirs, in which listeners may be invited to join. Each of the performers in the orchestra should be made to play his instrument alone in order that the listeners may realise the position it occupies in the score. A pamphlet giving a commentary on these concerts should be published in advance for the benefit of listeners.

D. — ENGLISH LITERATURE

The object of these courses should be to present an outline survey of the history of literature and to promote, among the pupils, a thorough understanding of the spirit by which it is animated. For example, a study should be made of lyric poetry from its beginning up to the present day. It is important that the texts of the famous poems chosen as the subject of these talks should be published and that these poems be selected with due regard to the literary ability of the pupils (1). The school teacher is not expected to comment upon these poems before the broadcast, but in all cases the pupils should be urged to study them at their leisure and to learn certain passages by heart in order that they may fully appreciate their beauty. The broadcaster may then give an outline sketch of this branch of literature, analyse certain examples, and indicate the influence exercised by the classics, emphasising the beauty of the different masterpieces. At the close of each talk, he should set

(1) Cf. *Foundations of Poetry*, by J. B. STOBART and Mary SOMERVILLE, B. B. C. 1926 — 3 pamphlets.

certain essay subjects and put questions which the pupils can answer afterwards if the teacher desires it. These essays may later be criticised and the best paper from each school commended on the microphone.

Broadcast lectures may also be used for *training pupils to think and to express their thoughts in words or writing* : how to tell a story and how to criticise it ; how to write a letter, how to find apt expressions, the right word, etc. The object of these lessons is to teach children to describe incidents which they have witnessed, scenes of every day public life and subjects with which they are familiar. The setting of essays on abstract subjects should be carefully avoided. To be effective, these lessons in composition and style must be given in constant collaboration with the school teachers ; the pupils are asked by the broadcast lecturer to write an essay on a given subject, the papers are read aloud and criticised by the teacher in the classroom. The lecturer, for his part, follows the work done each week on this same subject in a certain class and personally corrects the papers. In this way he is able to quote examples of faulty composition, to suggest his amendments and call attention to essays of special merit.

Another method, which has proved very popular, is to invite a literary critic to give a series of talks on certain notable books ("Some books I like" ; for example : Gulliver's Travels, David Copperfield, etc.), and to state his reasons why they should be particularly admired. The lecturer should avoid conveying the impression that the pupils must read certain books ; he should merely call attention to the interest which they offer so that the pupils will be induced to read them of their own free will. Lists of the books reviewed in the course of these talks, with the name of the publishers and the price (popular editions) should be issued. In order that the pupils may have an opportunity of hearing good interpretations of the works of great masters, certain periods should be set aside for the reading of typical passages from their books. In selecting such passages, preference should be given to scenes in which only a small number of characters (not more than six) feature. The school teacher should see that his pupils are provided with the text of the reading.

E. — LANGUAGES

1) *English.*

In these courses, attention is paid more particularly to the details of English pronunciation and lessons contain practical drill in vowels, diphthongs, consonants, intonations, and rhythms, nothing being said in disparagement of local dialects (1). The lecturer explains for example that letters and sounds are quite different things; he asks the pupils how many letters there are in certain words and how many sounds are made in each of these words. He then sets a weekly exercise: for example, the vowel sounds in certain words. After explaining what is meant by "tunes" in languages, melody and rhythm, he takes his pupils through a number of practical exercises in pronunciation and reading. It will be readily understood that these lessons call for the constant collaboration of the school teacher both during and after the broadcast. Consequently, the teacher and the pupils should provide themselves with the pamphlets; which give, in addition to the subject of each lesson, the practical exercises to be done during the week.

In conformity with the views of the Board of Education a special endeavour has been made in the last few years to teach the pupils to speak what might be termed "classic" English and to correct any faulty pronunciation derived from local dialect (2). These eminently practical lessons therefore

(1) Cf. *English Speech*, a year's course 1930-1931, by A. Lloyd JAMES, Central Council for School Broadcasting, 1930.

(2) Cf. *King's English*, by the same author. Central Council for School Broadcasting 1931. With a view to estimating the results obtained by these courses, the Committee for the Teaching of Languages instituted an enquiry among school-children. Before the series of lessons organised for the year 1932 was begun, it had gramophone records made of the recitation of a passage from a selected author by eighty different pupils. Later, when the course was ended, the Committee carried out a further test on the basis of the records reproducing the pronunciation of a group of pupils who had followed the course and that of another group which had not listened to it.

There was a striking difference between these two groups; the children who had taken these practical exercises by wireless had

include a statement of the general principle governing the building up of speech, followed by an explanation of a particular sound, with examples. This drill will give the pupils practice in the making of the sound and in ear training, thus enabling them to recognise at once good and bad varieties of pronunciation. The lesson ends with the reading of a short passage in which the sound under discussion appears spelt in different ways. The teacher, knowing the deficiency and the mistakes of his pupils' pronunciation should relate the broadcast instruction to their special need. Exercises dealing with rhythm and accent are also given.

These lessons are particularly suitable for pupils aged 11 to 14, but that may also be followed with advantage by more advanced pupils.

In planning these broadcasts, an endeavour should be made to introduce recitations of poems and prose selected from the works of famous writers ; the elocutionists should not only be first-rate artists but also capable of imparting to their recitations some of their own enthusiasm for these works, thus encouraging the pupils to read them.

2) *French.*

Beginner's Course : (1) The object of these lessons, given by French instructors possessing a thorough knowledge of the English language and mentality, is to drill pupils in recognising different sounds, in acquiring a vocabulary and in following a conversation between persons speaking French correctly. Each lesson consists of :

- 1) 5 minutes : practice in pronunciation (for example : the mute 'e').
- 2) 10 minutes : reading followed by an explanation of the text read.
- 3) 3 minutes : class singing (French folk songs).

made almost twice as much progress as that shown by pupils who had been taught by the classroom teacher.

It is of interest to note that 139 primary schools are at present following the courses in "King's English" broadcast by Mr. Lloyd James.

(1) Cf. *Early Stages in French*, by E. M. STÉPHAN, assisted by Mlle H. COUSTENOLE. Central Council for School Broadcasting 1930-31.

4) 7 minutes : dialogue alternating with the reading or recitation of French poetry.

In the dialogues, a man and woman's voice, and from time to time children's voices, are introduced. At the outset, the text of these dialogues was issued to the pupils but it has since been deemed preferable to make them the subject of the *lecture expliquée*, the pupils being asked to close their books and to listen only.

These lessons are given entirely in French, in order to accustom the children to the pronunciation of the language and to rely wholly upon their own power of accurate hearing. Translation into English tends to retard this training of the ear.

As, in some cases, these lessons may prove to be too great a strain upon listeners, 3 minutes singing have been intercalated in the middle of the period. This interval covers the change over of classes, where that is desirable.

The text of the *lectures expliquées*, songs and poetry, and the exercises should be distributed to the class beforehand, with all requisite instruction by the teacher. Every pupil should be provided with a copy of these texts. Pupils should be encouraged to take an active share in every part of the lesson ; the broadcaster asks them to repeat certain words, simple phrases and easy verses of poetry, and to join in the singing of the French song. The school teacher should have a blackboard in sight of all the class for writing the more difficult words heard during the lesson. A ready leader of the pronunciation exercises should sit near the loud-speaker so that the other pupils can get help from him without looking away from the loud-speaker.

Readings and Dialogues : (1) These broadcasts are designed for the secondary schools ; their purpose is to furnish listeners with an opportunity of hearing conversations between cultured French people on current events and problems, and recitations of poetry and gems of French literature.

A summary of these dialogues, with explanations of the more usual words and expressions, are issued beforehand in pamphlet form, but should be used merely for preparing the lesson and should not be consulted during the broad-

(1) Cf. *Talks for Older Pupils*, arranged by the Central Council for School Broadcasting, 1931-32.

cast. For the readings from literary works, the subject and text are communicated in advance to the pupils. These readings and conversations are timed to last 15 minutes.

3) *German.*

Similar broadcasts of dialogues and readings by German teachers are organised for pupils of secondary schools desirous of improving their knowledge of the German language.

F. — SCIENCE

After examining the possibilities offered by broadcasting in this field, the Sub-Committee for Science and Natural History were of the opinion that it was desirable to increase the number of talks designed to give pupils fundamental scientific facts concerning our daily life and grouped under the following headings :

1) *Nature Study.* These talks are distributed over a period of three years. Their aim is to enable pupils to acquaint themselves with the main aspects of English country life and to encourage them to take a personal interest in natural phenomena, the principal manifestations of which are portrayed to them by the lecturer — observation of weather conditions, crops, birds, plant life, etc. To this end, the subjects chosen for the yearly programmes have been distributed according to the seasons so that pupils might follow the developments of natural phenomena as and when they appear. Each talk is therefore timed to take place at an appropriate moment. It must be understood, however, that these talks, lasting 20 minutes each, do not claim to teach natural history proper or to supplant the normal school lessons in this subject.

2) *Biology and Hygiene* (1). These talks, each of 25 minutes duration, planned for the senior pupils of primary schools, also initiate boys and girls to the elementary principles of biology and physiology. The lecturer introduces the course with a general outline of the structure of the

(1) Cf. *Your Body Every Day*, by Winifred G. Cullis, Central Council for School Broadcasting, 1932.

human body and the functions of its organs ; next follows a study of each of these functions in greater detail : the functions of respiration, circulation, the senses, etc.

The language used is as simple as possible compatible with scientific accuracy. A pamphlet for each talk is issued giving a list of the technical words used and a short explanation of each. The teacher is advised to go through this list with the children before the broadcast. The pamphlet also contains a few simple diagrams and anatomical charts, with suggestions for easy experiments and demonstrations that can be carried out by the pupils themselves after the talk. It is essential that the pupils study these data very attentively, to draw their own conclusions therefrom and to apply them in their every day life.

3) *Agriculture and Horticulture (1)* (Rural Science) : These talks, lasting each 25 minutes, consist of two series : the first, entitled "The School Garden" is designed to initiate and interest pupils in gardening and open-air life. The lectures, which deal with flower-growing, fruit-trees, etc., furnish the pupils with practical advice and enable them, by carrying out the experiments suggested to them, to understand the phenomena that manifest themselves in the growth of the plants in the school garden.

The second series, organised more particularly for listeners in rural schools, deals with the practical application of certain scientific data in the running of a farm. Thus, these broadcasts deal in turn with such questions as the formation of arable land, different types of soil and their value for the cultivation of certain crops, the choice of seed, the way to attend to plants and trees and the appropriate manuring of the ground, etc.

4) Lastly, popular science talks are planned for senior pupils of secondary schools (2). The object of these talks is to enable lads who are about to leave college to acquire information regarding the different scientific careers open to them and the branches most suited to their ability and

(1) Cf. *Rural Science*, published by the Central Council for Broadcasting, 1930-1932.

(2) Cf. *Talks for Older Pupils*, arranged by the Central Council for School Broadcasting.

qualifications. These talks on the general trend of modern science, the tendencies that are manifesting themselves in its various branches, will also furnish pupils with a general survey of the movement of present day science and save them from the dangers of over-specialised training.

In this analysis of subjects, no distinction has been made between the different grades of pupils. These talks are intended for pupils of 11 to 15 and over. In secondary schools, the time-table and complexity of the curriculum render the organisation of these talks particularly difficult. The Committee on Secondary School Broadcasting is therefore of the opinion that, in present circumstances, broadcasts designed for this grade of pupils should be given after school hours, with the exception, of course, of the modern language courses, which, by reason of their value, fully justify an interruption in the scheduled work of a school.

These talks for secondary school pupils should therefore refer to current events and problems ; they should aim at initiating pupils to the fine arts, at stimulating their interest in literature and history, thus contributing to the development of their general culture.

METHODS OF PRESENTATION

The manner in which a certain subject is presented may perhaps be unsuitable for others. Such is the conclusion reached in the work of investigation and experiment carried out during more than three years by the Council. The different methods of presentation may be classified under the following six headings :

1) *Simple Exposition*. This is a straightforward talk given by an expert. This method of presentation is particularly suitable for history lessons and may also be adopted for broadcasts on geography, English literature and the sciences. For certain subjects, such talks may be illustrated, with sound effects, with songs or music or with the reading of passages of verse or prose.

2) *Lesson*. The lesson type of broadcast calls for active response on the part of the unseen class. It is suited only to a few speakers in a few subjects. The broadcaster asks questions which are answered aloud either by individual

pupils or by the class. He also asks the class to repeat words, phrases, etc. Such lessons call for a high degree of imagination and knowledge of children on the part of the lecturer. The method is suited particularly to broadcasts on English Speech, Modern Languages and beginners' courses in music.

3) *Story*. The story is a form of broadcast which is universally popular, whether the subject derives from fiction, or from history, geography or the lives of famous men.

4) *Dialogue*. This method is useful for lessons in Modern Languages, where it provides an opportunity for practice in listening to a variety of voices. The dialogue method has also been used successfully in broadcast lessons on history. An important point to remember, however, is that these dialogues should not take the form of question and answer. Each speaker must introduce his own point of view, and in this way contribute to the knowledge and development of the pupils.

5) *Dramatisation*. This method has been found particularly successful in connection with history lessons. Episodes are dramatised and acted by different characters before the microphone with appropriate sound effects. These dramatisations may either constitute the entire broadcast, or else, in a shorter form may be used to illustrate a talk.

6) *Unfinished Debates*. This form which consists of opening speeches in a debate on a given subject, the listening schools continuing the debate for themselves, has proved very useful, especially for pupils of secondary schools. Teachers who have organised debates between different groups of their class pupils know how difficult it is at times for the children to find a subject for discussion. Furthermore, they have little opportunity of hearing good model speeches. It was with a view to meeting these needs that a series of "Unfinished Debates" was organised. One speaker opens from the studio and states his views on a given question, after which another replies. The broadcasting then ceases and the listeners are left to continue the debate or make any other use they wish of what they have heard. Teachers find in these unfinished debates many interesting possibilities; for example, certain pupils may be detailed to study the style of the speakers, to analyse

the construction and argument of the speeches, etc. On the other hand, it may be found most useful simply to treat the speeches as openings for a debate.

Verification of Results (1).

When an attempt is made to determine the reasons for the success which has attended certain broadcasts, it is often impossible to decide whether this success is due to the subject matter of the talk or to the manner in which the broadcaster has handled it. Up to the present, the broadcasts which have proved the most popular are the geography and the music lessons. The first were given in the form of ordinary talks, occasionally illustrated by concerts or recitals. The talks on music were given as lessons, the broadcaster in this case making constant calls upon the individual work of the pupils.

With a view to estimating the value of these different methods, questionnaires are addressed from time to time to the schools taking a given course; on an average, however, not more than 27.5 per cent of the schools reply, and, generally speaking, the views expressed by the teachers are contradictory.

Nevertheless, the most popular broadcasts are the travel talks and the music lessons organised specially for the primary schools. It is very difficult to evaluate the relative utility of the other broadcasts from the point of view of education. In point of fact, everything depends upon the extent to which they can be framed up with the school syllabus.

(1) Cf. in this connection : *The Kent Experiment — 1927*, pp. 51, 57 ff. The general opinion held by primary school teachers was that these talks developed their pupils' knowledge, awakened their interest, left an impression as lasting as that made by ordinary classroom work, did not encourage inattention, were particularly evocative for the more advanced pupils, and furnished surveys on subjects and items of information which the teachers were not always in a position to give; further, they suggested to the teachers new ideas for their own class work. It was generally recognised that these lessons could not usefully be taken by children under 11 years of age. With regard to secondary schools, attention was called to the difficulty experienced in fitting these talks in with the normal school time-table and curriculum. See also *Some Problems of School Broadcasting* p. 16 ff.

From a general standpoint and with the exception of certain specific examples, the best form of presentation is the broadcast talk. Experience has shown that these talks should be given by lecturers speaking alone in the studio. Although this method has seemed to be the most suitable in Great Britain, in other countries it has been found that very good results are obtained when the broadcaster addresses his remarks to a small group of pupils sitting as a class in the studio.

Although more than 4,000 schools, 80 per cent of which are elementary schools, now take these broadcasts regularly, it may be asked why this number is not even greater, considering the work accomplished in this field by the B. B. C.

Various reasons may be advanced in explanation :

Firstly, the financial difficulties that have arisen in educational quarters often prevent a school from purchasing a receiver. A wireless set costs about £20 ; this represents a heavy item of expenditure for some of the rural schools.

Secondly, a large number of teachers still look upon school broadcasts with disfavour. Some regard this method of teaching as being too passive. We should not, however, be too ready to accept this opinion, which is too frequently expressed *a priori*. Others think that broadcasting ceases to interest children as soon as they have grown accustomed to its novelty. This opinion is contradicted by practical experience : among the schools which regularly follow the B. B. C. lessons, there are a substantial number who have been taking them for several years past. Others base their argument on the over-crowding of school programmes and the disturbance that these broadcasts necessarily occasion in the daily time-table. It must be pointed out, in reply, that the broadcast programmes and the times at which they are given are arranged specially for children ; there should therefore be no harm in intercalating some of the broadcasts if it is proved that they can be really beneficial to pupils.

Lastly, if some of the lessons broadcast up to the present by the B. B. C. have not been quite up to expectations, it does not follow that the fault has always lain with the organisers of the lessons or with the broadcast instructors. Failure to attain the desired object may also be due to the wrong use made of the broadcasts. In some cases, the

teachers have omitted to inform themselves on the nature and intention of the lessons and they have devoted still less attention to the preparation of their pupils. Consequently, lessons intended for children 9 or 10 years of age have frequently been followed by pupils of 14 or more. Other teachers have been content to assemble all the pupils of a school, regardless of age, for one and the same broadcast.

However, the B. B. C. Council for School Broadcasting are convinced that the *main obstacle to the propagation of this new method of teaching is to be found in faulty reception*. Pupils take an interest in a lesson only if they can hear the broadcaster's voice perfectly and without the slightest distortion. There are numbers of instances of schools having been equipped with receivers that might be sufficiently good for receiving broadcasts in the home but which are unsuitable for classrooms. To this may be added lack of upkeep and faulty manipulation of the sets.

Good reception is a condition *sine qua non* of progress in school broadcasting and, for this reason, the Council appointed a Committee composed of teachers and technicians to study these questions and to advise schools in the choice, installation and operation of wireless receivers. This Committee, which works in collaboration with the Department of Scientific and Industrial Research, has already drawn up a list of receivers specially recommended for school use. In conjunction with the Radio Manufacturers' Association, the Committee has also organised a hire service.

Choice and Training of Broadcast Lecturers.

The persons chosen as broadcast lecturers should not only be masters of their subject, they must also have the "radio voice" and be personally interested in educational broadcasting. Teachers should not, of course, be excluded, but it has been found that the latter are rather too inclined to deliver their talk in the form of a classroom lesson. For this reason, preference should, in principle, be given to persons possessing expert knowledge of the subject discussed (1).

(1) Cf. also the *Kent Experiment — 1927*, p. 2, and p. 52 — opinions of certain primary school officials of the County of Kent, who held that, for their schools, it was preferable to have a good teacher than an eminent expert. In the secondary schools, opinion was in favour of the expert.

In order that the lecturer may have an opportunity of knowing whether his talk is suited to the degree of understanding of his listeners, of determining what interests them most, of correcting himself when necessary, etc., the following method is recommended: the talk is recorded beforehand; the record of the talk is then broadcast by Blattnerphone and the lecturer listens in from one of the schools.

Collaboration between Broadcasters and Teachers.

The fundamental principle of school broadcasts as organised in Great Britain is that the studio lecturer and the school teacher should consider themselves as two collaborators and should remain in constant touch with each other. Rather than placing himself directly in contact with his listeners, the broadcaster should co-operate with the teacher in the preparation of the class pupils. With regard to this preparation, the less one departs from the usual methods of preparing classroom work, the greater the chances of success for the broadcast course.

Children's Hour.

These daily broadcasts, planned exclusively for children, consist of musical items, songs, stories, etc. They are designed by specialists in child psychology.

Although these broadcasts are of a recreational character, the training of the child's mind must not be overlooked. In this connection, the experiments now being made by the B. B. C. call for special mention (1).

The basic principle observed is that a child is a "young adult" and that he also takes an interest in what is going on around him. In the weekly 10 minute talks, therefore, an endeavour is made to give the children a general idea of world happenings. Education being a reaction in relation to environment, the children's imagination should be so impressed that they grow to realise that they are citizens of the modern world. Starting from the narrow and restricted limits of the child's surroundings, an attempt is made to

(1) Cf. *Broadcasting and the Child*, by Commander Stephen KING HALL. See *Education Series of Broadcasts*, Vol. III, No 1, March 1932, pp. 83 ff.

broaden his horizon and to give him, as it were a bird's eye view of that vaster and more complicated world, the problems of which he will some day be called upon to solve.

The subjects chosen for these informal talks are extremely varied, for example: how to read a newspaper, the gold standard, unemployment, great scientific discoveries and inventions, international politics, personalities who have distinguished themselves in the world crisis, books and children's magazines, etc.

In these talks, the broadcasters make a point of placing themselves on the children's intellectual level but are careful not to speak in too puerile a manner. They should, on the contrary be given the impression that what they are hearing is not intended to make them laugh but to make them think.

Any questions — and these can be very numerous — asked by the children should receive an immediate answer from the broadcaster, and, in the replies, the children should be furnished with all the information enabling them to find the elements of the answer themselves. They should be encouraged to develop the critical mind and not to accept all opinions without discussion.

These educational talks specially planned for children have been highly successful. The number of children who have followed them spontaneously may be estimated at over 100,000.



TEACHING OF THE AIMS OF THE LEAGUE OF NATIONS AND PROPAGANDA FOR PROMOTING THE INTERNATIONAL SPIRIT IN SCHOOLS

In these school broadcasts, the B. B. C. has, up to the present, devoted no great part of its programmes to an *ex professo* treatment of questions connected with the activities of the League of Nations and the major international associations. Mention must, however, be made of a talk specially devoted to the League in a series of broadcasts given this summer entitled "World History — Empires, Movements and Nations". Similarly, in the series: "Great

Moments in Modern History", organised in 1931 for pupils of 14 and upwards, talks were devoted to the origins of the League of Nations, the pact for the renunciation of war and to disarmament questions. In a series given under the title: "Tracing History Backwards", a broadcast was given on the subject of international co-operation.

Soon after the Central Council was constituted, a number of talks on International Affairs were given by Mr. Vernon BARTLETT, while in a weekly series entitled "Newspapers and the World", Mr. Wilson HARRIS spoke on current events with an international basis.

It will have been noted, moreover, that the broadcasts organised by the Central Council are designed to lead up to this ideal of international understanding. Thus, in the talks specially intended for children an endeavour is made to demonstrate to them that the world is a vast economic society and that, underlying the specific character of the different peoples, there is a common basis which unites them. For the children to understand this, it will often suffice to broadcast selections of folk music, legends chosen from the folklore of different countries, etc. The same impression may be conveyed by travel talks for older pupils, talks on the different nations and their civilisation, talks on history and geography, courses in modern languages, etc.

In the promoting of this international spirit among school-children, it should above all be remembered that what is required is the creation of a state of mind, a desire for friendly relations and international collaboration, rather than instructional talks dealing directly with the aims and activities of the League of Nations. The B. B. C. is quite formal on this point. This form of instruction should be combined with the teaching of the subjects figuring in the school curriculum whenever the subject lends itself to such development. The reports received in Geneva from the Board of Education and the Education Department of Scotland evidence the extent to which teaching in Great Britain is imbued with this spirit of the League of Nations and international collaboration. Thanks to the propaganda conducted by the League of Nations Union, pupils leaving the primary schools and, still more so, those leaving the secondary schools, are more or less familiar with League of Nations and its work.

In order that the younger generation may form a personal opinion on these problems, the League of Nations Union organised discussion groups in the schools as well as in certain post-school establishments ; these groups meet at regular intervals to discuss the ideas put forward in the talks on international affairs. If these discussions are to serve their purpose, they must be properly conducted. Consequently, summer vacation courses are held every year in Oxford, where pupils who have distinguished themselves by their special ability receive special training which will fit them for the work of group leaders.

Lastly, Mr. Gwilyn DAVIES, Vice-Chairman of the Council of the Welsh Association for the League of Nations has every year since 1922 on May 18th (the anniversary of the opening of the first conference at The Hague in 1899, known as "Goodwill Day") broadcast a message from the school children of Wales to those in every country of the world. In this connection, school teachers address their pupils on the benefits of international friendship. In numerous cases, there follows a programme of songs, living-pictures, recitations or short plays in illustration of the address. The message broadcast on behalf of the children of Wales is relayed to the leading stations. The replies, which are constantly increasing in number, received from abroad, are communicated to the thousands of children in the Welsh schools.

HUNGARY *

It has not yet been found possible to organise school broadcasting on a systematic basis for primary and secondary schools. Nevertheless, in practically all the secondary schools and in a large number of primary schools, broadcasting is used as an auxiliary instrument of teaching.

Instructional broadcasts for boy scout groups have been methodically organised, consisting of talks, songs, music recitals, recitations, descriptions of scenes from rural life, etc.

Broadcasting has not yet been incorporated in the programmes of higher education, but, as long ago as 1928, the Ministry for Education and Public Worship formed a "*Free Broadcasting University*" to meet the requirements of the rural population. Its programmes include : half-hour talks on subjects relating to general culture, music, recitations of literary works, folk poems and national literature. With a view to promoting a taste for national music and also to protect the interests of Hungarian composers, the works of foreign composers are excluded from the programmes of the "*Free Broadcasting University*".

* From a report by M. LUKNICH, Professor at Budapest University.

ITALY *

In 1927, the *Ente Italiano Audizioni Radiofoniche* (E. I. A. R.) was founded and granted a monopoly in the matter of broadcasting ; this organisation installed transmitters at Rome, Turin, Genoa, Milan, Trieste and Palermo. These stations devote six hours a week to morning talks on art, history, literature, foreign languages, hygiene, agriculture and political economy. The communes are exempted from the payment of the listeners' tax in respect of broadcasts intended for their national schools. The programmes are subject to the supervision of the Broadcasting Control Board.

ARTISTIC AND MUSICAL BROADCASTS

With a view to ensuring a high artistic standard in the programmes, the Art Committee of the Broadcasting Control Board requires that all lyric works broadcast shall be selected from those produced in the leading theatres. Operettas are executed in the station studios. Comic operas figuring in the traditional repertory of the country and which are the musical glory of Italy, must also be included in the programmes.

EDUCATION AND TEACHING PROPER

In addition to the usual lectures and talks on such subjects as literature, art, science, geography, sport, colonial propaganda, etc., the E. I. A. R. has this year organised a series of artistic, literary and scientific talks bearing on a specific subject ; these are more or less in the form of initiation courses but are not planned as lessons in the true sense. These talks generally do not last more than 15 minutes. The monthly programmes also include a commentary on a *canto* of the "Divine Comedy" and on passages

* From a report by M. Lucio SILLA, Professor at the Royal University of Rome.

from the works of great national poets, recitations of masterpieces, lectures on the works of great composers with music recitals, and talks on astronomy. These broadcasts are given at 5.35 p.m. on Wednesdays, Fridays and Saturdays.

The law of 1927 granting exclusive broadcasting rights to the E. I. A. R. contained certain clauses concerning the organisation of educational broadcasts for the rural population and consideration is now being given to the possibility of setting up a Committee on Educational Broadcasting, which would be directly responsible to the Ministry of National Education. In order that rural schools may have an opportunity of following broadcast lessons, it is proposed that, at the outset, arrangements should be made for the schools to hire wireless receivers. These receivers would be installed for periods of about two months and a technical expert would be detailed to initiate teachers to their use. By means of voluntary subscriptions, an endeavour would be made to collect the sums required for the purchase of these sets, in order that every rural school in Italy may ultimately be provided. When this has been done, it will be possible to organise a system of broadcast teaching proper, including lessons in foreign languages and, more particularly, lessons in the pronunciation of Italian.

With regard to the use of broadcasting in secondary schools, with the exception of a few special cases it does not appear that broadcasting can make any valuable contribution to the teaching of the subjects already dealt with in the classroom, as the hours that would have to be set aside for the programmes do not coincide very well with the normal school time table and, also, the programmes, which are of a very varied character, must be planned to meet so many different requirements.

JAPAN *

A. — EDUCATION IN GENERAL

1) School broadcasting has not yet been organised in Japan, but since April 1931, the central transmitter in Tokio has been giving educational broadcasts. In conformity with a plan drawn up by the authorities, these broadcasts are intended to supplement the tuition given in schools, stimulate the children's interest in the sciences and develop their moral faculties ; programmes of a recreational character are also broadcast.

2) The subjects broadcast include :

Languages, the natural sciences, geography, history and music.

3) As no definite school broadcasting scheme has as yet been prepared, these educational broadcasts are followed without distinction by primary as well as by secondary schools. The pupils of primary schools, however, are more particularly interested in descriptive dialogues and talks, whereas those in secondary schools prefer lectures and talks dealing with natural history, for example.

4) These broadcasts do not correspond to the school curricula ; consequently, it has not been deemed necessary to fix a special time-table for the broadcasts.

5) No special rules have been laid down in regard to the choice of broadcast lecturers, with the exception, however, of teachers of foreign languages, who should, as far as possible, possess a good knowledge of the country whose language they are teaching.

The programmes of these broadcasts are published in the daily newspapers.

6) Although there is no direct contact between the broadcast lecturers and their listeners, the latter are nevertheless prepared by their teachers, to whom explanatory pamphlets containing a summary of the broadcasts are issued.

* From the report communicated by the Ministry of Public Education on the subject of school broadcasting.

7) In the general broadcasting programme, provision is made for children's hours : from 2 to 2.30, from 3.40 to 4.20, and from 6 to 6.30 p.m.

**B. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS
AND PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS**

The school authorities and the major national education organisations have undertaken an active propaganda campaign with a view to promoting the international spirit among children.

Furthermore, in the course of lessons in ethics and history, teachers and schoolmasters instruct their pupils in the aims of the League of Nations and keep them informed on the principal international events (Disarmament Conference, etc.).

Lastly, numerous pamphlets on this subject are distributed.

MEXICO *

PRIMARY AND SECONDARY EDUCATION

TEACHING IN GENERAL

School broadcasting occupies a prominent place in the educational system of Mexico. It is in fact a marvellous teaching medium, for not only does it offer unlimited possibilities but also permits of obtaining excellent results. In Mexico, its rôle consists in extending the work undertaken by the Ministry of Public Education.

In choosing the *subjects* for the programmes, preference is given to those taught in the schools, and among these subjects, priority is given to national history, hygiene and citizenship.

These subjects are dealt with in three different ways : for the elementary primary schools they are given in story form ; for the higher primary schools in the form of simple talks, and for the secondary and professional schools, in the form of lectures.

These subjects may be taught in a series of lessons or talks given by an instructor before the microphone in the presence of a group of pupils. Experience has shown that these systematic courses of tuition and lectures are more suitable for pupils over 12 years of age, while lessons given in the studio are better suited to children between 6 and 12.

Programmes are drawn up by the Educational Broadcasting Bureau on the instructions of the Ministry. Broadcasters are selected by the Bureau and *trained* by the *Oficina Cultural*. The choice of broadcast lecturers should be left to the governmental authorities in each State, so that the teaching given may be in conformity with the traditions of the people. In Mexico, they are chosen from the staff of the federal services or from institutions in which the system of teaching is based on the principles of the Revolution.

Programmes are broadcast at fixed hours, preferably

* From a report by Miss Maria Luisa Ross, Chief of the School Broadcasting Department at the Ministry of Public Education.

between 4 and 7 p.m., and serve to supplement the lessons given by the schoolmasters. This adaptation to the school time-tables is entrusted to the different administrative departments concerned with rural schools, primary and normal teaching and the National University. The Mexican transmitter XFX, installed by the Ministry of Public Education, is reserved for educational broadcasts, this specialisation having been recognised to be indispensable.

Pupils are prepared by broadcast, since it has been found that this method is the best for concentrating their attention on a given subject. In certain cases, for example in courses dealing with manual work, the pupils are asked to refer to illustrations.

For the purpose of verifying results, competitions and exhibitions are organised and prizes awarded for the best efforts. By this method it has been possible to judge the value of certain talks, for example, those relating to manual work and the building of wireless receivers.

INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS

With a view to promoting a spirit of international brotherhood among school-children, the broadcasts organised in Mexico have included, more particularly, travel talks, legends and stories of ancient and modern history, talks on the social and commercial relations between nations, their folklore and popular arts, music, etc. On the occasion of important anniversaries, talks are arranged for the purpose of recalling the lives and work of famous men of the different countries who have distinguished themselves in the fields of science, art or industry.

The activities and aims of the League of Nations form the subject of short talks introduced into history lessons and comments on current events. A series of talks on disarmament and peace has also been broadcast.

These programmes are drawn up by the *Oficina Cultural Radio-telefonico*, a service which is attached to the Ministry and which works in collaboration with inspectors and principals of educational institutions.

The broadcasts last from 15 minutes to an hour according to the grade of pupils for whom they are intended. The

intervals between the talks are filled by the broadcasting of music.

School-children listen these broadcasts in their classroom and then write a detailed account of what they have heard ; their papers are afterwards forwarded to the Oficina.

HIGHER EDUCATION

Broadcasts planned for students last from 10 to 15 minutes.

Instruction in the aims of the League of Nations is given in special talks broadcast on the anniversaries of particularly important events.

NETHERLANDS *

I

PRIMARY AND SECONDARY EDUCATION

School broadcasting in the Netherlands is, to all intents and purposes, organised on the same legal basis as education proper. The programmes comprise broadcasts for the official non-denominational schools and for the independent denominational institutions, which, in this respect, are placed on exactly the same footing. Thus, in addition to the *Algemeene Vereeniging Radio Omrup*, which is a non-denominational broadcasting association, we find the *Nederlandsche Christelyke Radio Vereeniging*, the organ of the protestant churches, the *Katholieke Radio Omrup*, a catholic wireless association, and the *Vereeniging van Arbeiders Radio Amateurs*, the broadcasting organisation of the socialist party. Consequently, it has so far been impossible to draw up an educational broadcasting programme uniformly suitable for all schools in the country.

Notwithstanding this difficulty, however, the "neutral" broadcasting organisation known as the *A. V. R. O.*, as long ago as 1927, carried out a series of experiments for the secondary schools and, later, for the higher primary schools. The subjects chosen for the broadcasts are : geology, zoology, sociology, geography, hygiene, literature, art, and certain technical questions. These broadcasts are given on Fridays from 2.05 to 2.45 p.m.

The protestant association (*N. C. R. V.*) also organises educational broadcasts for the protestant primary schools. The talks deal with religious subjects : commentaries on the Bible, sacred music, missionary stories, etc., in addition to the subjects enumerated above.

No authoritative opinion can be expressed regarding the *methods employed* until the majority of teachers and pupils

* From reports submitted by : 1) Professor G. van VEEN, Associate Director of the Pedagogical Seminary at Amsterdam University ; 2) the Council for Education by school broadcasting — report drawn up in 1929 for the Ministry of Public Instruction.

have been properly trained to listen to these broadcasts. Up to the present, they have been followed only by radio enthusiasts and their opinions are not sufficiently critical to allow us to arrive at any definite conclusions.

There exists, however, a certain prejudice against school broadcasting which must be removed.

The tendency of modern pedagogy is to render teaching more and more individual, to conceive it in relation to the pupils' personal aptitude and as a means of developing their character. Broadcasting, on the contrary, is conducive to passivity ; it is, so to speak, a mechanised system entirely devoid of any personal element. Many educators therefore argue that this method of teaching is in contradiction to the principle of modern pedagogy.

Let us suppose, for a moment, that broadcasting really encourages passivity. The few half-hour educational talks to which the pupils listen once a week cannot, in any case, be conducive to passive habits.

It is an established fact that educators generally consider that visual impressions are better calculated to stir the imagination of pupils than auditive impressions. This is true if we envisage solely the formation of *sense-perception*, but the argument does not hold good in the case of *sense-impression*. Impressions acquired through the ear appeal more to the imagination and, by a process of association, create new pictures in the memory, whereas the knowledge acquired through the eye, by the very fact that it is concrete and definite, leaves no scope for the play of human imagination.

To claim that the listener is no more than a passive pupil would amount to denying that he is capable of putting into operation an internal process of representation. Everything therefore depends upon the way in which listeners react to these broadcasts. If they have been adequately prepared and provided that their general culture is of a sufficiently high standard, their auditive impressions will constitute the starting point for active and fruitful work.

Furthermore, the subjects chosen for talks must be adapted to the regular classroom syllabus, in order that the pupils may, after each broadcast, derive the maximum benefit from what they have heard. This is particularly easy in the case of broadcast lessons in modern languages ;

the pupils should take notes during the lesson and later repeat the passages broadcast and mutually correct each other.

Neither should it be alleged that, as this system of teaching by wireless is stereotyped and, as it were, rigid and inflexible, it is a lifeless and inert system and should, in consequence, be abandoned. To this objection, we would reply, first of all, that all school teachers are not gifted with the faculty of adjusting their delivery and statements to the inspiration of the moment and to the looks of inquiry which they may perhaps discern on the faces of their pupils. The broadcaster, moreover, also has a personality, an emotive sense ; he literally abandons himself to his listeners and does not come to the microphone without having carefully prepared his subject. These favourable conditions are far less likely to be fulfilled by a teacher giving an ordinary lesson to a class of pupils.

2. — HIGHER EDUCATION

Broadcasting is used by the universities in connection with their extension courses but not for their normal courses. There is also a broadcasting association specially concerned with the promotion of general culture among adults.

3. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT

Although these questions do not generally figure on the programmes of the different educational broadcasting organisations, this by no means implies that the members of the teaching profession in the Netherlands are indifferent to the work being done by the League of Nations and to the promotion of a spirit of understanding and co-operation between nations. The reason is chiefly that school teachers have not yet found a means of presenting these subjects to their pupils in a way that would appeal to their hearts and hold their attention. Broadcasting, which, by its very nature, is already international, undoubtedly constitutes a powerful instrument of propaganda in this field. The essential point is to know when and how best to use it.



II

Educational broadcasting should be introduced into school programmes simply as an auxiliary means of teaching, in the same way as gramophone records, films, etc. Furthermore, the broadcasts should not be given too frequently : two half-hour talks per week may be regarded as a maximum.

Owing to the very nature of broadcast teaching, it cannot claim to play a more important part than classroom teaching. This method of tuition, in fact, *does away with direct and personal contact between teacher and pupil*, it is addressed to the population as one mass, whereas the essential aim of education is to develop the personal faculties of the individual. Broadcasting tends to make a pupil *a too passive listener*. An attempt has been made to counteract these drawbacks by introducing an interlocutor to represent the views of the pupils, or even of a whole class, and to ask questions, which the broadcaster answers before the microphone. This method, however, is rather superficial and the questions asked by the interlocutor very often do not correspond to those which the listeners themselves would ask. When it is the broadcaster who asks questions, the pupils are sometimes apt to lose the thread of their own reasoning.

Moreover, this method of teaching is purely *mechanical*. It does not permit of the repetition of certain sentences. In this respect, broadcasting is less satisfactory than the gramophone record. If, for any reason, the pupils become inattentive or in the event of trouble with the receiver or difficulties of transmission, it is practically impossible for them to follow the lesson.

A further objection is that it is far more difficult for the teacher to maintain order in the classroom during a broadcast than during an ordinary school lesson. This applies more particularly to the lower grades of primary schools.

On the other hand, broadcasting enables pupils to hear lectures and talks by specialists and persons of note. Talks of this kind, especially those dealing with the national

psychology of peoples, geography, travel and discoveries, natural phenomena and the natural sciences, lectures for the promotion of peace, health talks and temperance talks, can be very useful to pupils ; they stimulate their interest in these subjects and broaden their intellectual horizon.

Notwithstanding these advantages, broadcasting as an instrument of education must be used with discretion and caution. The subjects chosen should be of a nature to hold the attention of the pupils from beginning to end. Subjects that require complicated material and apparatus in the classroom should be avoided. Broadcasts should not be given too frequently, one or two a week constituting a reasonable maximum, with the exception, perhaps, of those planned for vocational and evening schools, where broadcasting may render valuable service by allowing technical experts to speak on the progress of modern technique and thus to make good the scarcity of specialists, especially in rural areas.

NORWAY *

I. — PRIMARY AND SECONDARY SCHOOLS

The Rôle of School Broadcasting — Subjects — Methods.

A system of broadcasting for schools has been functioning regularly for the past year. It was introduced solely with a view to facilitating the work of school teachers, who choose the subjects most likely to help them in their teaching. The value of these broadcasts is most apparent in isolated primary schools in rural areas, where the pupils represent the great majority of listeners. Urban primary and secondary schools are relatively less dependent on the wireless programmes. Up to the present, school broadcasts have been planned chiefly for the benefit of pupils in the 5th, 6th, 7th and, in a certain measure, the 8th and 9th standards of primary schools.

Broadcasting plays a supplementary rôle, more particularly in the primary school programme, in connection with the following subjects : Nordic languages, literature, history, elements of natural science, geography, national industries, and music. Higher primary schools also follow foreign language courses, chiefly in English and German. Secondary schools make use of broadcasting as an aid to the teaching of languages and literature, and also for history and music.

As regards the *method of presentation*, experience would seem to show that, for broadcasts intended for the primary schools, the dialogue between broadcaster and announcer, which gives life and variety to the talk, is the most effective.

For secondary schools, the broadcasts may be in the form of talks.

The same person is responsible for the drawing up of programmes and for the choice of broadcast lecturers. When choosing broadcasters, preference is given to

* From a report by Professor F. WILDHAGEN, Director of the Education Department of the Kringkastingskapet, Oslo.

teachers, and as far as possible to primary school teachers. For foreign language courses, the broadcasting organisations engage the services of foreign instructors who give their lessons entirely in their native language.

In order that these broadcast courses of instruction may be of an active character, pupils should be carefully prepared beforehand by their classroom teacher and, during the broadcasts, the latter should follow the trend of the lesson by referring to maps and diagrams, etc. He should also take notes as and when indicated by the lecturer, thus setting an example to the pupils. In this respect, the school teacher should display more activity than his pupils.

The director of the school broadcasting service should see that all necessary instructions are issued to the teachers well in advance of the broadcasts. He should take every possible opportunity of visiting the schools, remain in touch with them, give talks specially designed for the teaching staff and contribute articles to the educational journals. Brief instructions may also be given from the studios immediately before the different lessons are broadcast.

All necessary directions should also be published in the pamphlets containing the programmes. These should also contain illustrations, texts, etc. for distribution to the pupils.

Results obtained.

These broadcasts have proved beneficial more especially to the rural schools. If the lessons have not always been as successful as might have been desired and if, in some cases, they have been regarded as being of too "sensational" or novel a character for them to be incorporated in the normal school curriculum, the reason is that they have not always been adequately prepared or properly adapted to the needs of the pupils. Sometimes also, the broadcaster may have failed to deliver his talk with the life and energy required to keep his listeners constantly alert and active.

II. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT

Talks broadcast for the benefit of the *primary schools* should deal chiefly with subjects that awaken the spirit of community that exists between nations ; for example : history, national customs, music and folk songs. Talks on the aims and activities of the League of Nations may also be organised, illustrated by actual examples of the work accomplished. Broadcasts reviewing outstanding events in world politics are more suitable for the senior pupils of secondary schools, and an important place in the programmes should be reserved for talks describing the life and civilisation of the different peoples.

In this field, broadcasting is destined to render a great service ; pupils who are given an opportunity of listening to perfect renderings of literary and musical masterpieces are imbued with the spirit of the human heritage exalted in these works and experience a feeling of sympathetic brotherliness for the nations which have produced great writers and composers. Following out this idea, too great praise cannot be given to the work accomplished by the famous benefactors of mankind. Thus, the Norwegian stations have broadcast several talks on Fridtjof Nansen.

With a view to facilitating these broadcasts, the Norwegian programmes include a special section known as the "foreign news bulletin". These are given once a week and have been very much appreciated by listeners. During the winter months, a series of wireless "circular tours" is broadcast, consisting of relays of foreign programmes which best represent the social life of the different peoples of Europe. These relays contribute very largely to the development of the international spirit and are immensely popular in Norway.

The mere fact that the Norwegian press devotes numerous articles to the discussion of these talks and that numbers of letters are received by the Broadcasting Office on this subject, proves that the Norwegian public is genuinely interested in these questions and follows the programmes with the closest attention.

III. — HIGHER EDUCATION

The University of Oslo and the higher technical schools do not broadcast their normal courses of tuition, but once a year the professors in these faculties deliver a series of popular talks on the progress of science and on the results obtained in its several branches. These talks are afterwards published in pamphlet form.

Some of these talks have dealt with international law and financial problems. Although no special system has as yet been adopted for instructing the people in the aims and activities of the League of Nations, these broadcasts have nevertheless played an important part in the promotion of the spirit of international co-operation.

POLAND *

School broadcasting in Poland is still in the experimental stage ; the results noted at the end of the school year (June) will, however, permit of the drawing up of a general programme.

The first experiments in this field were carried out by the Lwów transmitter, when, in the spring of 1931, it organised ten broadcasts from the Academy of Lwów for the benefit of the primary schools.

In agreement with the Ministry of Public Education, it was decided to use wireless broadcasts as an auxiliary aid to teaching, to enlarge its scope and to make it more active, but under no circumstances was it to supplant ordinary classroom tuition.

Since last autumn, twenty or more broadcasts have been given on Saturdays from 12.10 to 12.45 pm.

They are primarily intended for pupils of from 12 to 15, that is, for the senior classes of the primary schools and for the junior grades of the gymnasiums.

The following subjects figure in the programmes :

- 1) Languages and literature.
- 2) Natural sciences.
- 3) History.
- 4) Fine arts.
- 5) Current events.
- 6) Music.

Broadcasts have been given under the following titles :
Elocution lessons — The Fables of Mickiewicz and La Fontaine — Folk Poems of Ruthenia — Nature in November — Stones are made to speak — The Defense of Trembowla — The Puppet Show — Armenians in Poland — The Anniversary of the Polish Revolution of 1863 — The Birthday of the President of the Republic — Economy Day — Christmas Concerts and Carols — Classical Music — Recitals of Chopin's works, etc.

* From a report submitted by Professor Henryk Moscicki, Director of the Radio-Poland Broadcast Lecture Department.

For the last few years, the Warsaw station has also been broadcasting morning concerts given by the Philharmonic Society of Warsaw. The children attending the national schools in the capital listen to these broadcasts in turn, while the pupils of the provincial schools are also able to follow them thanks to the relays arranged with their regional transmitter. In this way, it has been possible to organise about thirty concerts annually. The object of these morning concerts is to initiate children to the masterpieces of the classic and romantic period.

Each broadcast is divided into several parts : a talk ; the recitation of poetry ; songs, and, very often, a music recital. For example, the broadcast entitled "Stones are made to speak" consists of a talk given by a pupil on the ruins of the Castle of Zólkiew and of a radio-play.

The broadcast entitled "Among blind children" was divided into five parts : An introduction by the Director of the Institute ; a talk by a pupil on "How my imagination perceives the objects around me" ; a recitation ; a conversation between the announcer and a teacher on daily life at school, and lastly, a musical item.

In connection with some of the morning broadcasts on artistic culture, the pupils are handed reproductions of famous Polish works of art with a view to stimulating their aesthetic sense. For the broadcast entitled "The Armenians in Poland", four pictures were prepared, representing an exterior view of the Armenian cathedral at Lwów, an interior view, a picture by Rosen and the Gospel of the XIIIth century.

These pictures are distributed through the agency of the Educational Inspectors to every school equipped with a wireless receiver.

These inspectors also issue all the necessary instructions to teachers and urge the schools to avail themselves of these broadcasts in so far as technical circumstances allow. The broadcasting programmes are published in advance by the different educational journals.

The morning broadcasts to schools are also commented upon in the wireless and daily press, while numerous letters are exchanged between the pupils and their teachers, on the one hand, and the organisers of the programmes, on the other.

On the whole, these broadcasts have proved very popular

both with teachers and children, who take a very keen interest in these wireless lessons.

It is at present rather difficult to foresee what line school broadcasting will take in Poland. Its development depends chiefly on the extension of the transmitting system to the various school areas and on the possibility of ensuring good reception.

The Government are endeavouring to interest the communes in school broadcasts and are inducing them to purchase and maintain the necessary equipment.

With a view to the realisation of this project, Radio-Poland has already produced several standard receivers complete with loud-speaker suitable for school use, due account being taken of local conditions, the facilities of main supplies, etc.

The new schools will be supplied only with receivers of the above type.

In order to promote school broadcasting, the Ministry of Public Education has caused a census to be taken of all the receivers in use in the country, with a view to determining exactly what the schools require.

Apart from these school programmes, Radio-Poland has, for the last few years, been giving broadcasts specially designed for youth. Certain of these broadcasts dealt with the promotion of peace and sought to interest youth in the work of the League of Nations and in international questions in general.

ROUMANIA *

EDUCATION IN GENERAL

The microphone cannot claim to be more than an *auxiliary* instrument of education ; it can never usurp the position occupied by the school-teacher, whose method of teaching is direct and "living".

This principle having been recognised, an endeavour has been made to make the broadcasts as attractive as possible, so that in following them after school hours the pupils may not find them unduly tiring. They serve to supplement the knowledge which is acquired in the classroom and to improve their moral education.

School broadcasts are given on Saturday afternoons from 3.30 to 5. Up to the present, they have been planned for the junior classes of the secondary schools, that is for pupils from 14 to 18.

These programmes were made up as follows : two talks, or even three in some cases, at least one of which was on a scientific subject, lasting 15 minutes and having some bearing on subjects studied in school. The talks were divided into seven series in which the following subjects were taken in rotation : Roumanian, literature, the history and geography of Roumania, foreign literature, the natural sciences and philosophy. These lessons are given by eminent personalities in Roumanian intellectual circles.

With regard to the teaching of foreign languages by wireless, children have the possibility of following courses in French, English and German organised for the general public. The text of these lessons is given in the broadcasting pamphlet *Radiophonie*, published in Bucarest. The possibility of introducing wireless elocution lessons in the school programmes is at present under consideration.

The above talks are followed by half an hour's music, with commentaries, and a quarter of an hour devoted to a news bulletin : items of professional interest to pupils, com-

* From a report by Professor Fr. Kiriac, Organiser of School Broadcasting Programmes.

ments on important events in the world of science adapted for child listeners (literature, science, geography, history, etc.), book reviews, etc.

In view of the success that has attended these school broadcasts, arrangements are being made to organise a series of educational programmes for pupils of 11 to 14 years, comprising lessons specially adapted to their age.

As an inducement to pupils to take an active part in these broadcasts, inter-school contests are shortly to be arranged.

These programmes are drawn up by a Programme Committee composed of representatives of the different branches of learning and of the school authorities. Sub Committees are responsible respectively for the preparation of the talks and the musical programmes.

Broadcasts are also given for the special benefit of young children on Sundays from 11 to 12 consisting of the recitation of stories, informal talks, etc.

HIGHER EDUCATION

The association known as "Radio-University" broadcasts daily from 7 to 8 p.m. three lectures of twenty minutes duration; these lectures are of a popular character and deal with the following subjects: science, literature, sociology, national politics, fine arts and music, philosophy and religion, history and geography. One of these daily talks is devoted to news of a scientific character concerning the movement of ideas and intellectual life.

INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND THE PROMOTION OF THE INTERNATIONAL SPIRIT IN SCHOOLS (1)

In Roumania, instruction in the aims and activities of the League of Nations is officially recognised as forming part of the classroom curricula of the primary, secondary and normal schools.

(1) Cf. *The Teaching of Peace and post-war International Problems in Roumania*, by Constantin KIRITZCU, Director-General of Higher Education. Published by the International Bureau of Education, Geneva, 1930.

The aim of the teachers should not be solely to inform the younger generation on the work accomplished by the League of Nations but also and more particularly to engender a spirit of sympathy for the ideal for which this institution stands : to encourage youth to regard co-operation as the normal and most logical method of handling international affairs and to imbue it with the idea of peace. Consequently, the process should not merely be one of *teaching* but of *educating* youth.

Education, however, is synonymous with pedagogical teaching based on a knowledge of child psychology. Children belong to a determinate section of the community and are constantly subjected to its influences. It is this influence of home and social environment that must be turned to the best advantage and allowed to subsist.

The questions with which the League of Nations is concerned are not, in fact, abstract ideas, but questions of fact which are of direct interest to the life of peoples and which, through the channels of family and social life, also affect children. An endeavour should therefore be made to emphasise the salutary work that is being done by the League of Nations whenever its influence has been exercised in a manner favourable to the aspirations of the country. In view, however, of the close relationship that exists between the political life of a country and the mind of its children, no great reliance should be placed in the efficacy of direct propaganda. From a general standpoint, it would be preferable to begin the international education of children by stressing and by arousing admiration for the great principles which constitute its moral basis. Pupils should be made to understand that justice and solidarity must be the controlling factors in all relations between nations, as between individuals.

It was in this spirit that the author of this report has organised propaganda on behalf of the League of Nations with the aid of broadcast talks to Roumanian schools.

SPAIN *

THE RÔLE OF SCHOOL BROADCASTING

School broadcasting in Spain has not yet been systematically organised. It is only an auxiliary method of teaching and it cannot be regarded as one that should occupy a prominent place in school programmes. For primary schools in particular, the sound film is of a nature to render greater services to teaching.

Broadcast lessons appeal only to the ear and are scarcely suitable for primary schools. Pupils should be trained to listen progressively, for example by the Children's Hours, so that they may later be ready to listen more profitably to the broadcasts planned for the secondary schools.

In this grade of education, broadcasting may be accepted as a *supplementary* method of teaching for those subjects which, by their very nature, arouse the pupils' interest and on which it is possible to fix their attention: literature, history, geography and natural history for example. For the teaching of foreign languages, care should be taken to choose very simple subjects that can be discussed in those languages, in order to teach correct pronunciation and train the ear of the pupils, who, moreover, should already have a fair knowledge of the language and its grammar. Broadcast lessons in history should revive a given period and, whenever possible, they should be illustrated by music, descriptions of national customs and the exposition of characteristic incidents in the lives of famous people, etc.

Generally speaking, the broadcasts should be interesting in themselves and thus lead the listeners to concentrate their thoughts on subjects which they have already studied.

* From a report by M. BUENO, Director of the Iberian Electrical Equipment Company, Technical Adviser to the Broadcasting Union.

SWEDEN *

THE RÔLE OF EDUCATIONAL BROADCASTING

Educational broadcasts have been given regularly in Sweden since 1929. Their object is not to supplant the teacher but to supplement his teaching by original and carefully prepared talks on subjects figuring in the school curriculum and for which school teachers are not adequately equipped. The essential aims of school broadcasting should be to present original lessons given by experts and eminent educators on certain subjects in the school programmes, to guide pupils to the fountain-head of knowledge, to stimulate their interest and imagination by bringing them into touch with persons of note, and to awaken new ideas in their mind.

These programmes are intended chiefly for the primary schools, and more particularly for the senior pupils, for the higher primary schools and, in a lesser degree, for the secondary schools. The pupils of primary schools represent, in fact, the majority of Swedish school-children and, moreover, they have no teachers who specialise in any given subject ; it is therefore possible to modify the school time-tables more easily and to allow the pupils to follow these broadcasts without interfering with normal school routine.

SUBJECTS

A) *Primary Schools.*

1) *Teaching of Swedish* : The purpose of these lessons is to teach the pupils to use appropriate words, to acquire a good style, a knowledge of the history of the language and a literary training. The lessons are illustrated by readings from well known authors, and by recitations.

2) *Talks on History* : General talks on the civilisation and outline history of Sweden, adapted to the programmes of the leaving examinations of the primary schools.

* From a report by Dr. Gösta BERGMAN, Organiser of School Broadcasting at the Swedish Broadcasting Company.

3) *Citizenship* : Concrete expositions of the functioning of institutions and the rôle of statesmen. For example : descriptions of the opening of Parliament, the work of a Budget Committee, the origin of taxation, the duties of a prefect, of ministers and the head of the executive assembly.

4) *Geography* : Talks are given more particularly by explorers on foreign lands and on the different regions of Sweden.

5) *Physical and Natural Sciences* : Talks on the fauna and flora of the country in conjunction with talks on geography. The principal physical phenomena and the fundamental laws of chemistry.

6) *Health and Hygiene* : Exposition of the principles of health protection, with practical advice.

7) *Vocational Guidance* : Practical advice and information.

8) *Music and Singing* : The singing of folk songs with commentaries ; recitals of classical works with descriptions of the different instruments played.

9) *Recitations* of selected Danish and Norwegian poems and prose.

B) *Higher Primary Schools.*

Citizenship, technical talks (chiefly on agriculture), teaching of the Swedish language.

C) *Secondary Schools.*

Broadcasting is used principally in connection with the teaching of languages : English, German, French, Danish and Norwegian (pronunciation, elocution, phrase-building, etc.).

METHODS OF TEACHING

In so far as possible, these lessons are given in the form of *simple talks or conversations*. Recitations are used for selected works written in the different languages, which the pupils can follow word by word in printed texts. The *dialogue*, in so far as it resembles a conversation, is generally recommended ; for these broadcasts, the broadcaster has beside him in the studio two pupils, a boy and a girl, for example, who represent outside listeners during the

talk. These two pupils and the lecturer should prepare the dialogue very carefully in the form of questions and answers. This method is used chiefly for the teaching of foreign languages. It should be pointed out, however, that as these dialogues are, in a way, public conversations, they are very often apt to become artificial and, in consequence, may lose their instructive value.

PREPARATION OF LESSONS — ACTIVE TUITION

It must be constantly borne in mind that the broadcast lesson is merely a stage in an educational process which consists of preparation, transmission and subsequent application.

Preparation.

The schools must first of all be suitably equipped with the necessary apparatus, and teachers and pupils must be taught how to use the receivers, etc. Experience has shown that the use of head-phones, which give the listener the impression that he is nearer the broadcaster, are more likely to hold the pupils' attention and give a clearer reproduction. Head-phones are therefore to be recommended for lessons in foreign languages. On the other hand, a loud-speaker makes it possible for a greater number of listeners to follow a broadcast and is therefore less expensive. In any case, the broadcasts should be received in relatively small rooms.

The explanatory pamphlets published in connection with the lessons are of capital importance. They enable the teacher to choose the talks which he considers best suited to his pupils, to prepare his class for the lesson and to apply the suggestions given for subsequent classroom work. The pamphlets are also useful in that they make it possible for the eye to help the ear and thus partly fill any gaps that may occur in the broadcast lesson.

The pamphlets should give :

1) A summary of each talk, with the texts and explanation of difficult words in the case of foreign language courses.

2) Illustrations and diagrams. Swedish schoolmasters have particularly requested that the number of illustrations, maps, etc., be increased.

3) Questions to be answered by the pupils either orally or in writing, with exercises to be done after the broadcast.

4) Bibliographical information and directions for listeners who wish to study a subject in greater detail. This latter point chiefly concerns the teachers and the information might be given in a special pamphlet containing also the conditions for contests and instructions regarding the classroom work to follow. Separate pamphlets might, for example, be published for foreign language courses. They should give the full text of recitations, a glossary of difficult words arranged in the order in which they occur in the text.

One of the essential aims of school broadcasting is to teach pupils to follow a talk attentively and later to deduce fundamental conclusions from it. In this connection, school broadcasts provide pupils with a new form of work which is particularly valuable from the point of view of mind-building. The pupils should next be given test papers for the purpose of stimulating their interest, and prizes should be awarded for the best efforts. In connection with health talks, for example, they should be asked to state the essential principles they have learned from the broadcasts and to indicate the beneficial results to be obtained by following the practical advice given. Thanks to this method, the principal rules of hygiene remain deeply impressed on their memory.

The secondary schools have adopted a system which calls for special mention : two or three pupils from each class are detailed to listen to the broadcast and they afterwards give an account of what they have heard to their school-fellows.

VERIFICATION OF RESULTS

The Swedish educational broadcasting authorities have on several occasions solicited the opinion of teachers on the value of the different programmes. Although statistics do not permit of a valid analysis of results from the point of view of educational value, the following figures are of interest :

The enquiry carried out in the spring of 1929, after the first six months of broadcasting, showed that out of 231

headmasters consulted, 158 were definitely in favour of the continuation of the lessons.

With regard to the teaching of foreign languages, a number of teachers preferred the gramophone to wireless, especially for the teaching of phonetics. It is true that records make it possible to repeat the same exercise as often as may be decided. But for training the ear of more advanced pupils, preference was given to the radio, which does, in fact, offer a greater variety of programmes and enables listeners to hear the really spoken voice.

A second enquiry was held in the autumn of 1929. Its aim was to determine the rôle of broadcasting in schools. Secondary school teachers were generally of the opinion that this method of teaching was particularly suitable for the teaching of foreign languages, since pupils were given an opportunity of hearing the broadcast instructor speaking in his mother tongue.

Recitations of passages from Swedish literature, historical poems, etc., were specially appreciated by the primary schools. The same was true of lessons in Danish and Norwegian and geography lessons. Talks on natural phenomena and the natural sciences were still more popular.

The higher primary schools preferred talks on vocational guidance, foreign language courses, plays, biographies of famous men, discussions of current events and educational lectures.

The greatest enthusiasm for these broadcasts was shown by the primary schools, especially those situated in isolated parts of the country ; they explained that wireless bridged the space between them and the urban centres ; it gave them, as it were, more teachers and introduced an element of variety into their work, besides stimulating the activity of the pupils and improving the teaching methods of the staff.

A third enquiry was conducted in the spring of 1931 and revealed that 685 schools had regularly followed the broadcasts, namely : 618 primary and higher primary schools and 67 secondary schools.

GENERAL CONCLUSIONS OF THESE ENQUIRIES

1) A steadily increasing number of schools — especially primary schools — throughout the country display an

obvious interest, supported by detailed documentary evidence, in these school broadcasts.

2) The schools should be given an opportunity of hearing original talks by specialists as often as by educators.

3) The broadcasts should supply what school teachers are generally unable to supply. School broadcasting should supplement but never supplant classroom teaching.

4) Broadcasting puts life into the usual methods of teaching and allows the schools to vary their work. It also brings new and useful ideas to the notice of teachers.

5) The lecture, in the strict sense of the term, should be replaced by an exposition along the lines of a classroom lesson. This exposition should, moreover, be vivid, clear and expressed in very simple language. Dialectic pronunciation should be avoided and the level of the talk should be adjusted to suit the age of the listeners.

6) Pamphlets containing the programmes are indispensable as a supplement to the broadcast. Certain subjects require, for example, a large number of illustrations. The pamphlets should also contain questions and exercises bearing on the talks. The text used as a basis for the broadcasts should be reproduced in these pamphlets whenever it cannot be easily obtained elsewhere.

7) The organisation of competition essays on a given subject has proved extremely useful.

8) Series of talks which compel pupils to follow each one in order that they may really profit thereby should be avoided. Each talk should be complete in itself.

9) The programmes of school broadcasts should be circulated to the schools in good time, that is before the terms begin.

10) The most convenient time for school broadcasts would seem to be the last hour of the day; they might even be given immediately after school hours.

11) The majority of schools use a loud-speaker. Some, however, prefer head-phones for lectures or recitations.



The Swedish broadcasting system functions under the control of the Telegraph Department, to which all technical questions are referred. The programmes are drawn up

by a private body : the Aktiebolaget Radiojänst, which is at present responsible for the school broadcasts. For the preparation of the latter, it is advised by an expert, who, of course, submits them for the approval of the Ministry of Public Education. The Ministry approves the programmes for the ensuing half-year, convenes meetings of experts and representatives of the schools and discusses the composition of the school programmes with them.

**INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS
AND PROMOTION OF THE INTERNATIONAL SPIRIT (1)**

Sweden takes such a keen interest in the work of the League of Nations that it would be superfluous to organise special propaganda campaigns on its behalf.

As regards instruction in the aims and activities of the League and in major international questions, the general opinion is that this instruction should be given during school hours, advantage being taken of broadcast lessons, particularly lessons in geography, history and citizenship. It is proposed to introduce very shortly into the school broadcasts a series of talks on the League of Nations and international affairs.

But the most favourable opportunity for engendering among school children this spirit of mutual understanding and international co-operation is to be found in the Children's Hours broadcast for listeners of 6 to 14. In these programmes, a special endeavour is made to introduce talks on the customs and social life of foreign peoples, musical interludes consisting of their folk songs, legends, etc.

A very effective method, which is frequently adopted in Sweden, is to relay, for the special benefit of children, a part of the Children's Hour broadcast by other countries, accompanied by explanatory talks. Also, as is frequently done in the Scandinavian countries, arrangements can be made to exchange these programmes or even to exchange messages of greeting between the children of the different nations.

(1) Extract from a report by M. ROSBERG, Secretary General of the Association of Swedish Teachers.

SWITZERLAND

I

Up to the present, the experiments made in school broadcasting have been of a very local character. This is explained by the autonomy enjoyed by the cantons and by the fact that, until quite recently, there were no inter-regional transmitters in Switzerland.

Among the first experiments carried out in connection with educational broadcasting, mention should, however, be made of those organised by the Investigation Committee in response to a wish expressed in July 1930 by the school-teachers of the Berne canton.

These experimental broadcasts consisted of 18 half-hour lessons, distributed as follows : music — 4 ; German — 3 ; geography — 2 ; natural sciences — 3 ; French — 3 ; English — 3. These lessons were broadcast on Tuesdays from 2.10 to 2.30 p.m., and on Thursdays and Saturdays from 10.30 to 11 a.m.

Notwithstanding the unfavourable conditions under which these experiments were conducted, they enabled the Investigation Committee to collect the opinions of listeners and to formulate the following conclusions :

As regards the place that should be allotted to broadcasting in the national system of education, it was unanimously agreed that the rôle of wireless lessons should be purely supplemental, that they should be used only for certain subjects and only in so far as the teacher is unable to deal with these subjects with the help of the means at his disposal.

In support of this view, it is argued that this method of teaching is contrary to the fundamental principle of pedagogy : the concentration of the pupils' attention on the subject which they are studying. As the broadcaster is not visible to the pupils, his personality generally exercises no

* From reports submitted by : 1) The Association of Swiss Teachers (Schweizerischer Lehrerverein) ; 2) Dr. GILOMEN, Chairman of the Swiss Association for School Broadcasting.

constant and efficacious influence upon them; he cannot stabilise their attention when necessary or give the incidental explanations that help the pupils to understand. Furthermore, this method of teaching is purely auditory and does not appeal to the eye. For these reasons it is feared that pupils are apt to adopt too passive an attitude when listening.

It is also pointed out that these broadcast lectures or lessons sometimes act on the mind of pupils as a foreign body does on a living organism. To counteract this drawback, it would be necessary to spend considerable time in preparing listeners.

It is, however, generally agreed that, if confined to its rôle of a supplementary aid to education, this method of teaching is of appreciable value.

With regard to the *subjects that best lend themselves to this form of teaching*, teachers and schoolmasters are of the opinion that *music* should be placed first. Concerts and recitals are, on the whole, to be recommended less than talks on music accompanied by musical illustrations. In this respect, broadcasting can be particularly beneficial.

The same may be said in regard to the teaching of *languages*; German-Swiss teachers recommend that priority should be given to the mother tongue of the pupils. As a rule, loud-speakers are more satisfactory than gramophone records for the reproduction of pronunciation, tone and rhythm of the human voice. As the broadcast lessons in foreign languages are, for the most part, given by foreign instructors, they can be of immense value. Opinions are divided on the question of teaching *geography, history and the natural sciences* by wireless, and it is argued that, for these subjects, there is less scope for broadcast lessons since they are not so adaptable to this method of teaching. Special emphasis is laid on the importance of keeping these subjects within the intellectual range of the pupils and of using easy, simple and current expressions. In this connection, allowance must be made for the difference of standard between pupils attending town schools and those attending rural schools.



As regards the *method* to be adopted, educators were generally not very favourably disposed to "type lessons" in which the broadcast teacher addresses his remarks to a group of pupils in the studio. In their opinion, this method seemed artificial and stereotyped. Opinions were also divided on the question whether it is preferable to give these lessons in serial form, in which the subjects logically link up one with the other, rather than to give them in a series of independent talks.



The replies received in the course of these investigations stressed the *necessity of adapting the broadcast programmes* to the curricula of the different schools. Programmes should therefore be drawn up well in advance and the days and times fixed for the broadcasts should be stated in order that headmasters may arrange their own time-tables accordingly. Certain subjects should be broadcast invariably on the same days and at the same times.

It too frequently happens that broadcast lessons disorganise school programmes and necessitate changes in the time-tables. These difficulties arise chiefly in connection with the schedules of lessons given in the schools by teachers specialised in a particular subject and, to avoid these difficulties, it has been found advisable to arrange for the broadcasts to take place before noon, during the last hour of the morning period.

As regards the *choice and qualifications of broadcasters*, it is agreed that preference should be given to persons with teaching experience or at least familiar with the methods adopted in schools. These broadcast teachers should speak in natural and very simple language and should not hesitate to address their listeners in their local dialect when necessary; they should also interrupt their lesson in order that the school teacher may have an opportunity of asking certain questions and of replying to those asked by his

pupils; in this way, pupils are encouraged to take an active part in the broadcast.

In this connection, explanatory pamphlets or leaflets giving summaries of the talks, diagrams, maps, etc., should be sent beforehand to the teachers in order that they may adequately prepare the pupils. Similarly, the poems recited before the microphone should be chosen from among those which are already familiar to the pupils and which may be found in their text-books.

II

EDUCATION IN GENERAL

If the first experiments in school broadcasting carried out in Switzerland in some cases failed to give the results that could legitimately be expected, the explanation was sometimes to be found in the faulty conditions of transmission and reception. These conditions have improved very considerably since the national transmitters were put into operation.

The second series of experiments was carried out in February and March of this year, when broadcasts were taken by 95 schools in German Switzerland: primary schools, secondary schools and district schools, as from the 7th year. Twelve broadcasts lasting from 25 to 30 minutes each were given, the Swiss School Broadcasting Association being responsible for their organisation. The schools were provided with good receivers, together with a booklet containing all the necessary instructions for each broadcast.

A printed questionnaire referring to each broadcast was prepared beforehand and the schools were invited to fill in their replies after each lesson or talk. The questionnaires were then returned to the organising committee. By this means it was possible to verify the result obtained by each broadcast. These results, expressed in the form of percentages and the different subjects chosen, are given in the following table:

	Did the subject interest you ?		Was the execution good ?		Did your pupils profit by the broadcast ?		Are you in favour of these broadcasts being given regularly ?	
	Yes %	No %	Yes %	No %	Yes %	No %	Yes %	No %
Hour's talk on Haydn	98,4	1,6	98,3	1,7	98,-	2,-	94,6	5,4
Running commentary on work at the Mint	97,1	2,9	93,9	6,1	95,2	4,8	92,3	7,7
How does a musician express his thoughts ?	98,6	1,4	91,3	8,7	85,7	14,3	86,6	13,4
An aeroplane flight from Bâle to Stuttgart.	94,-	6,-	78,5	21,5	80,-	20,-	84,5	15,5
Opera for schools	80,3	19,7	78,7	21,3	58,2	41,8	63,2	36,8
Law making (dialogue).	97,4	2,6	94,6	5,4	90,3	9,7	81,4	18,6
Hour's talk on Goethe	98,6	1,4	64,5	35,5	76,9	23,1	80,6	19,4
A lecture on Benares.	100,-	0	100,-	0	100,-	0	100,-	0
City water supply.	98,7	1,3	94,7	5,3	97,3	2,7	94,7	5,3
Instructive sketch : a traffic accident	100,-	0	98,5	1,5	98,5	1,5	97,1	2,9
A lesson on French intonation.	96,6	3,4	82,8	17,2	96,-	4,-	90,3	9,7
Symphony concert.	98,2	1,8	100,-	0	92,6	7,4	90,9	9,1

After the last broadcast, each teacher was asked to draw up a general report, along the lines given in a leaflet issued beforehand. The following table gives a summary of the conclusions reached in these reports :

	Yes	Partly	No
Do you consider the results of these experiments satisfactory ?	73	3	2
Do you consider that, given good receivers, school broadcasting is a useful method of teaching ?	79	—	1
Are you in favour of its being permanently adopted ?	73	—	4
Quality of reception	{ Good : 75 - Satisfactory : 6 - { Medium : 2 - Bad : 0.		

As regards the subjects to be chosen for these broadcasts, teachers placed them in the following order of priority : music, geography, German, foreign languages, history and the natural sciences.

Advantages of School Broadcasts. — We will here confine ourselves to a recapitulation of the observations presented by the school teachers. School broadcasting supplies what the teacher is unable to give in classroom lessons. It furnishes pupils with an opportunity of hearing talks by persons of note and by experts on every subject. It permits of giving varied programmes, establishes a link between schools and the outside world and trains pupils to listen to a lecture. It furnishes a means of hearing correct pronunciation, puts life into, and extends the scope of, teaching and permits of giving listeners a musical training. It provides recreation for pupils and stimulates the work of teachers. It broadens the mind and is a medium of *rapprochement* between the children of different regions and countries. Pupils are guided to the very source of knowledge. It is particularly useful for schools situated in isolated districts. It encourages concentration, trains the mind, stimulates the imagination and enables listeners to take part in events of every day life

As regards the disadvantages of this new instrument of teaching, it was stated that as the pupils cannot see the broadcaster, the broadcasts are often of too impressionistic a character. Wireless appeals only to the ear and therefore excludes visual impression. As it is not always possible to adjust the broadcasts to the curricula of the different schools, there results a certain disorganisation and irregularity in classroom teaching. Pupils are too ready to become merely passive listeners.

Taken on the whole, however, the replies sufficed to confirm that the experiments had been highly successful. There were, of course, certain defects but these were due either to the fact that several broadcasters were still novices, that some subjects were treated in too academic a fashion or that the lecturer did not express himself in terms comprehensible to the majority of the children. These are all points that can easily be set right.

Encouraged by the success of these experiments, the Swiss Broadcasting Company decided to broadcast programmes specially designed for German-Swiss schools as a regular feature as from November 1st, 1932. The Swiss School Broadcasting Association has again been entrusted with the execution of these programmes. During the winter term of 1932-1933, two broadcasts will be given weekly for pupils in or beyond their 7th year of study. The programmes will be broadcast in turn by the transmitters at Bâle, Berne and Zürich. The Programme Committee meet in Bâle and Zürich, while the Managing Committee has its headquarters at Berne.

Each broadcast is prepared with the utmost care and the broadcast lecturers are required to submit their texts well in advance. These texts are examined in detail and the author is asked to make any amendments that may be necessary. Two or three rehearsals are then held, generally in the presence of a group of children.

Consideration is also being given to the possibility of organising, for the spring of 1933, a series of broadcast lessons in Italian, for the benefit of the schools in the Canton of Tessin.

To give efficient instruction in the aims of the League of Nations and to promote a spirit of understanding between peoples we must start from the principle that the spirit of universal solidarity can be developed among children only

in progressive stages, in which they are gradually led from the perception of concrete facts to the understanding of abstract principles. In this field, broadcasting offers unparalleled possibilities.

Wireless broadcasting is in fact the only medium that makes it possible to give children what may be termed a tangible impression of international solidarity. By way of a beginning they should be given an opportunity of hearing examples of the national music of the different countries, preferably folk songs. The children will form a very definite impression in their own minds that they all belong to one vast community, with the same ideals and the same destiny. The mere fact of hearing wireless programmes organised and broadcast in foreign countries is in itself sufficient to imbue them with this spirit of solidarity. The ideal would be attained if it were possible for the children of the different countries to give musical programmes themselves and to organise short radio-plays for the benefit of their comrades abroad. They could also mutually assist each other in the study of languages and promote a spirit of gratitude and friendship. In addition to these children's programmes, there should be given concerts, talks on the civilisation of different peoples, addresses by famous men and news of important current events in all parts of the world.

In instructing children in the aims of the League of Nations, the first step should be to describe the activities and concrete organisation of this institution ; simple talks could be given on the proceedings that take place at Geneva ; some of the speeches could be broadcast, thus bringing home to the children that the League of Nations is something real and living, whereas abstract talks very often give the impression that the League of Nations is a far distant body for which it is difficult to display any great enthusiasm.

This point cannot be over emphasised. In instructing the coming generation in the aims of the League of Nations and in the promoting of the international spirit, this fundamental law of teaching has too often been disregarded. Endeavours have been made to teach children abstract principles instead of leading them gradually from the concrete to the abstract. This method of instruction, which alone can be effective in its results, has now been rendered possible by the advent of broadcasting.

UNITED STATES *

I. PRIMARY AND SECONDARY EDUCATION

EDUCATION IN GENERAL

1) *The Rôle of Wireless Broadcasting in the Educational System of the United States.*

By way of introduction, it must be pointed out that education in the United States is not organised on a uniform basis. Only two States have included radio in the official organisation of their public schools, and the greatest possible latitude is left to them in the choice of wireless programmes.

The broadcasts specifically planned and presented for school use may be classified under the following headings :

a) *National*, like those of the Damrosch Music Appreciation

* From the *Report of the United States Office of Education.*

These replies to the Institute's questionnaire were drafted as a result of a meeting of educators representing a number of official and unofficial organisations specially convened for this purpose at Washington by the Director of the United States Office of Education. They may therefore be regarded as representing the authoritative opinion of an appreciable proportion of American educationists. The meeting was attended by the following : Miss Bess GOODYKOONTZ, Assistant Commissioner, U. S. Office of Education (Department of Interior) ; Mr. ARMSTRONG PERRY, Director, Service Division, National Committee on Education by Radio ; Dr. C. M. KOON, Senior specialist in Education by Radio, Office of Education ; Dr. J. H. Mac CRACKEN, Associate Director, American Council on Education ; Mr. MORSE SALISBURY, Radio Service, Office of Information, U. S. Department of Agriculture ; M. PHILIP G. LOUCKS, Managing Director, National Association of Broadcasters ; Mr. JOHN W. ELWOOD, Vice-President National Broadcasting Company ; Miss ALICE KERR, Broadcasting Director, American School of the Air, Columbia Broadcasting System ; Mr. GERALD C. GROSS, Engineer, Federal Radio Commission ; Dr. LEVERING TRSON, Director, National Advisory Council on Radio in Education ; Miss JUDITH WALLER, Vice-President Radio Station WMAQ. The substance of these replies is here given together with the documents to which they refer.

Hour, broadcast throughout the country by the National Broadcasting Company, and those of the American School of the Air, whose courses are diffused by the Columbia Broadcasting System. The object of these musical broadcasts, accompanied by descriptive talks, is not to supplant the beginners' classes held in the schools, but to present a programme which could not be obtained by other means and to collaborate with the teacher in the musical tuition of the child. The same may be said of the programmes designed by the American School of the Air; an enumeration of the subjects dealt with will suffice to illustrate their suppletive character : memorable events in the history of the United States ; geography ; musical programmes and talks on literature and art ; commentaries on world events ; physical culture ; elements of the practical sciences ; talks on vocational guidance, etc.

b) *Regional*. Among the regional systems may be mentioned the Standard School Broadcast of California, which also gives musical programmes accompanied by talks for the benefit of schools along the Pacific coast. The Ohio School of the Air (1) arranges its programmes in such a way as to supplement and extend the education given in the schools. Thus, the daily programmes include talks on outstanding historical events, the geography of the United States, brief lectures on the natural sciences and botany, literature and practical language courses. Similarly, the North Carolina Radio School, organised by the Public Education Department of that State, broadcasts commentaries for the benefit of schools on current events, episodes in national history, musical numbers, travel, health and hygiene and physical culture courses, with a view to supplementing and enlarging the class teacher's work.

c) *Local*. Among the leading local broadcasts are the programmes of the Board of Education Radio Committee of Chicago which deals more particularly with the principal phenomena of nature, geography, vegetable and animal life, character training, health and hygiene, talks on art and poetry for pupils of primary schools and Junior High Schools. In Cleveland, where experiments have been carried out in the public schools and the Junior High Schools, the

(1) Cf. "Radio — The Assistant Teacher", by Ben H. DARROW, Director of the Ohio School of the Air, Columbus, Ohio, 1932.

programmes include, in addition to arithmetic, elementary courses of art and music, information on books to read, talks on science, domestic economy, history, physical culture, etc.

The supplemental character of these broadcasts is clearly shown in the foregoing survey of the programmes. Educational authorities in the United States, in fact, agree generally that school broadcasts should be made to play an auxiliary rôle, designed to assist and complete the work of the teachers. These broadcasts should :

- 1) enrich the curriculum ;
- 2) stimulate pupil interest and activity ;
- 3) increase public understanding and appreciation of schools ;
- 4) motivate the professional growth of teachers in the service.

2) *Subjects which best lend themselves to this Method of Education.*

According to the Payne Fund National Survey, school administrators placed these subjects in the following order :

Music Appreciation.
Geography and Travel.
Literature and English.
Health and Hygiene.
History.
Current Events.
Civics and Citizenship.
Talks by Prominent Persons.
Dramatics.
Holiday Programmes.
Nature Study and Science.
Character Building.
Art Appreciation.
Parent-Teacher Programme.
Games and Physical Education.
Safety.
Vocational Guidance.
Spelling and Grammar.
Opening Exercises.
Clubs for Boys and Girls.

Public Speaking and Parliamentary Practice.
Domestic Economy.

The persons qualified to draw up these programmes are State superintendents of public instruction, State boards of education, county and city superintendents of schools, and local education boards. These authorities should prepare the programmes in co-operation with the broadcast teachers and in agreement with the classroom teachers who propose to use the broadcasts. The experts point out that the manner in which the lecturers present their subject plays an important part in determining the pupils' preference (1).

3) *Methods of Teaching to be adopted :*

<i>Primary education</i>	<i>Technical education</i>	<i>Secondary education</i>
Lectures.	Lectures.	Lectures.
Directed classroom work.	Directed classroom work.	Directed classroom work.
Eye-witness accounts.	Eye-witness accounts.	Eye-witness accounts.
Musical presentation.	Musical presentation.	Musical presentation.
Dramatisation.	Dramatisation.	Dramatisation.
Stories.	Stories.	Stories.
Dialogues.	Debates..	Debates.
Discussions.	Discussions.	Discussions.

(1) In this connection, the enquiry undertaken in 1931 by Miss Florence C. Fox, primary education expert at the U. S. Office of Education (cf. U. S. Department of the Interior, Office of Education Circular N°. 17) is of special interest. This enquiry related to the programme broadcast by the Ohio School of the Air and concerned pupils of the 6th, 7th, 8th and 9th grades of primary education as well as their teachers. The historical part of the programme, presented in narrative form and dramatised episodes illustrating the history of the United States was particularly appreciated by the pupils, who declared that these broadcasts "put much more life into their history lessons". The teachers were of the same opinion. The other subjects broadcast : literature, music, hygiene, and the natural sciences, found far less favour among the pupils. As regards the method of presentation, 97 % preferred dramatised versions. All the teachers shared this opinion. The narrative method was voted for by 82 % of the pupils, while 75 %

The system of broadcasting lessons with a class of students present in the studio with a view to observing their reaction is scarcely a practical one. Besides, the methods of teaching by radio are different from those used before a visible class.

4) Incorporation of Broadcasts in the general Framework of Classes.

In the elementary schools of the United States, schedules can generally be arranged so that the proper classes will meet at the broadcast period. Sometimes, the order of the subject matter in a course, as well as the time-table, are arranged to follow the sequence of the broadcasts. Since many elementary pupils take a number of their subjects with the same teacher, the latter will have no difficulty in incorporating broadcast programmes in the regular class work (1).

It is more difficult to incorporate the broadcasts in the work of the secondary schools. Up to the present, a fair number of High Schools have arranged their schedules so that a radio period is provided for the entire school at the broadcast hour. In some cases, two pupils are selected from each class to listen and report to their school-fellows. Experience has shown, however, that it is better for pupils to listen in their own classrooms, with the subject teacher in

voted against lectures. The system of discussion on a given subject was approved by 60 % and rejected by 40 % of the pupils. The teachers, on the other hand, gave a majority vote (90 %) in favour of dialogues and debates (74 %).

(1) In order that the teachers might incorporate the broadcasts in the general schedule, the Radio-Research Bureau, Teachers' College, Columbia University, recommended that the teachers should draw up a weekly list of the subjects chosen in the broadcast programmes, these programmes being circulated to them in advance. The pupils should also be invited to indicate the subjects which help them most in their daily work. This list might be drawn up as follows :

Station	Time	Pupils for whom the broadcasts are intended	Subjects	Specific object of this talk. for example : talk to be the subject of the week's examination.
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charge ; in that way, visual aids can be used when required to supplement the radio.

However this may be, it is absolutely essential that the educational broadcasting organisations collaborate with the school officials in the choice and planning of their programmes (1).

As regards *the most convenient hours for these broadcasts*, curriculum requirements in a country so vast as the United States make it impossible to formulate a representative opinion on this point. A number of schools have, however, signified their preference for the following periods : from 11 to 12 a.m. and from 2 to 3 p.m. (local time).

5) *Preparation and Execution of Programmes.*

Various organisations in the United States are responsible for this work, more specifically : the National Advisory Council on Radio in Education, which comprises several sub-committees specialised in the study and preparation of programmes ; the National Committee on Education by Radio, set up in pursuance of a decision of a conference convened by the United States Commissioner for Education. This committee is composed of official representatives of national organisations concerned with education in the United States ; the Office of Education, attached to the Department of the Interior, which, as long ago as 1929, appointed an Advisory Committee on Educational Broadcasting ; the Bureau of Educational Research, of the State University of Ohio ; the Radio Research Bureau of the Teachers' College, Columbia University, etc.

Among the organisations which broadcast an educational programme for all the States, we may mention also the

(1) A number of educators take the view that instead of adjusting school schedules to correspond with the periods of broadcast programmes, it would be preferable if the reverse course were followed, in so far as circumstances permitted. As pointed out by Mr. Levering Tyson, Director of the National Advisory Council on Radio in Education, educational broadcasting organisations should consider it their duty to collaborate with the school authorities not for the purpose of drawing up programmes but with a view to bringing them into line with the school schedules.

National Broadcasting Company and the Columbia Broadcasting System.

Choice and Technical and Pedagogical Training of Professors invited to broadcast. — In the organisation of a broadcasting project, the persons invited to lecture may be selected for their prominence, popularity and competency, but as the work progresses, teaching skill and good radio personality are the qualifications to be sought. The broadcasting teacher should not only be a master teacher possessing a thorough knowledge of his subject, but also an effective broadcaster. The broadcast lessons should be prepared by a subject matter expert and presented in such a manner as to conform to the standards of this new medium of education. To this end, certain universities, such as the University of Iowa, the University of Wisconsin, the University of Akron and New York University organise courses of practical training for broadcasters.

Propaganda on behalf of these broadcast lessons should be conducted by the journals and magazines which publish the programmes; the articles should be followed by brief commentaries, questions that stimulate the reader's interest, photographs, etc. Arrangements should also be made to publish propaganda pamphlets, lists of recommended books, manuals for pupils and teachers, etc. Propaganda may also be conducted in direct collaboration with members of the teaching profession, by the exchange of individual and collective correspondence, by the organisation of competitions and the awarding of prizes, and by giving publicity to these lessons during broadcasts which are not specifically of an educational character.

6) *Relations between Radio Professors and Listeners.*

In order that this form of instruction may be effective and active, it is imperative that the pupils should be made to participate so that they may not become merely passive listeners (1). The lesson should therefore be carefully pre-

(1) In this connection, an experiment carried out in the public and Junior High Schools of Cleveland is worthy of special mention. These experiments were initiated in 1929, when courses in arithmetic for pupils of Grades 2, 3 and 4 of the public schools were organised.

pared in advance at school by the teachers and explanatory pamphlets should be distributed to the teachers and pupils. Thus, for Damrosch Music Appreciation Hour, the National Broadcasting Company of New York issues student notebooks regularly for the use of pupils. Listeners are asked to give their opinion on certain broadcasts and to answer definite questions concerning a lecture ; for example : « What does the violin suggest to you in the Lohengrin prelude ». These pamphlets also give photographs of celebrated musicians, of the instruments played during the broadcast, etc. A teachers' manual contains suggestions for the preparation of forthcoming broadcasts, together with considered replies to the questions which the pupils will be required to answer. These suggestions refer to the general preparation of the class (accuracy of ear and playing ability to be developed in the pupil) as well as to the special preparation (records that should be played beforehand to the pupils, beginning with short and easy recitals). The pupils are not required to form an opinion on the broadcast items until after having heard them several times, when it is possible to discuss them and to determine the reasons why certain passages give them more pleasure than others. The pupils should be allowed freely to state their views and to speak on the life of great composers. They may also be asked to sing and even play certain passages.

The American School of the Air publishes a "Teachers' Manual and Classroom Guide", which gives a summary of

The first advantage of these courses was that teachers were able to improve their teaching methods after listening to the lessons broadcast by particularly competent professors. Their activity was also stimulated by these broadcasts. They had, in fact, to reply to the numerous questions asked by their pupils, to prepare the lessons and address the class on the subjects already dealt with through the microphone. This form of instruction therefore assumed a particularly active character. To judge of the results, the work done by the pupils of 36 schools who had taken the broadcast was compared with that of 36 other schools in which this part of the curriculum had been taught in accordance with normal methods. It was found that for the solving of problems the pupils in Grades 2 and 3 of the schools working according to ordinary methods showed greater ability than the others, but that the latter excelled in their knowledge of elementary arithmetic (*vide* report and documents communicated to the Institute by Mr. A. BATHRICH, Associate Director of the Cleveland Schools).

the talks to be broadcast, a list of books to read, the films to be procured and the diagrams to be reproduced on the blackboard (for example, in connection with talks on elementary science). An illustrated pamphlet entitled "My Radio Picture Book", issued for children, reproduces photographs of the famous men to whom reference will be made in talks on the history of the United States, landscape views, etc. For the musical programmes, this organisation also publishes a pamphlet containing illustrations designed to teach listeners the life of the composers and describing the instruments played by the performers. Mention may also be made of the Ohio School of the Air Courier, the Teacher Musical, published by the Chicago Daily News Broadcasting Station, the Bulletin of the North Carolina Radio School, published by the Department for Public Instruction, etc.

Although personal contact between broadcasters and school children may not always be possible, contact can easily be established by correspondence and, more particularly, by organising competitions and by correcting the pupils' papers.

7) *Should there be Transmitters used exclusively for the Broadcasting of Educational Programmes ?*

In the United States, practically all the broadcasting organisations devote a part of their programmes to education ; 49 stations belong to educational institutions but none of these is used solely for the broadcasting of educational programmes. The Federal Radio Commission is at present examining this question (1).

(1) Opinions on this point are very divided in the United States. The National Committee on Education by Radio, for instance, advocates a national legislation which would permanently and exclusively reserve a wave-band for educational broadcasting organisations and confer on each State the right to utilise an allotted portion of this band for educational purposes. These educators express their disapproval of the monopoly system in broadcasting, which, in their opinion, is tending to establish itself for the benefit of commercial firms and to the detriment of educational radio, not only as regards the hours of broadcasting but also as regards the choice of subject matter. On the other hand, the National Advisory Council on Radio in Education considers that, thanks to the funds at their disposal, commercial firms are more in a position to employ

8) *Broadcasting Periods reserved for Children — Children's Hour, etc.*

A large percentage of the broadcasting stations in the United States have children's hour programmes and the number of children who listen to these programmes is considerable. The Library Co-operation Committee set up by the National Advisory Council on Radio in Education is working in collaboration with Children's Librarians who have distinguished themselves in the art of story-telling. The programmes now under consideration will contain dramatic and musical elements.

9) *Results obtained.*

Two different methods have been adopted to ascertain and verify the results obtained : broadcasters visit listening schools and hold conferences with the teachers ; or local school officials prepare tests to ascertain the effectiveness of the broadcasts. The more common practice is to send out questionnaires (1).

Another means of verifying results consists in organising radio contests and in comparing samples of the pupils' papers.

The results obtained undoubtedly point to the conclusion that broadcast lessons can with advantage be used to supplement ordinary teaching methods ; they motivate the pupils'

experts for the preparation of good educational programmes and to engage good performers. In support of their argument, they mention the services rendered to educational broadcasting organisations by commercial concerns such as the National Broadcasting Company and the Columbia Broadcasting System.

(1) The Ohio School of the Air sends out a questionnaire for each lesson broadcast ; the questionnaire asks for a report on the effectiveness of the lesson and the interest shown by the pupils ; the radio personality of the broadcasting teacher and the manner in which his delivery might be improved ; the value of the tuition given, its presentation ; explanations given in the preparatory pamphlets and the improvements that might be introduced ; suggestions for the forthcoming talk, etc. A special questionnaire deals with the use which the teacher makes of the broadcast (extract from a report by Mr. DARROW, Director of the Ohio School of the Air).

interest and set standards of good teaching. Teaching by radio, however, can never replace other methods or serve as a general medium of instruction.

II. — UNIVERSITIES AND COLLEGES

It has been demonstrated by ten years of experience that interest can be stimulated, and formal and informal instruction given, by means of radio, in most university subjects. Therefore, the Advisory Committee is of the opinion that a university should advance public interest by doing its share of educational broadcasting, maintaining extension services, organising discussion groups and providing follow-up reading and activities to be done in connection with the broadcasts (1).

(1) Among the universities broadcasting educational courses, we would mention in particular the Universities of Iowa, South Dakota, Nebraska, the Ohio State University, the University of Florida, the University of Illinois and the University of South California. The Aglethorpe University, Georgia, has organised a course of tuition given exclusively by radio and awards degrees to persons who pass examinations in the subjects broadcast (literature, languages, science, history, sociology, psychology, ethics and commercial sciences). The students choose their courses, take notes and submit them to the professors. The professors and the students discuss questions at regular intervals. A large number of educators are, however, of the opinion that broadcasting can be put to the best use in university extension courses (cf. report communicated to the Institute by Dr. SProuD, President of the University of California). Radio might usefully be employed in connection with lectures delivered by the professors, for broadcasting statements and discussions on problems of general interest and for circulating information on the courses, programmes and lectures of the different universities ; it can also furnish students with bibliographical data and guide them in their studies, disseminate information and advice to certain classes of the community, to farmers, for instance. These broadcasts should be short and should not last more than half-an-hour. With regard to the broadcasting of normal university courses, it is generally agreed that even for the courses which best lend themselves to this method of education (literature and history courses), the system of granting credits to the students who have followed them is not to be recommended (Cf. LEVERING TYSON : *Contributions of Radio to Higher Education in Education on the Air*, Ohio State University, Columbus, 1930, p. 142).

II

OPINIONS AND SUGGESTIONS OF EDUCATORS

Supplemental Rôle of Educational Broadcasting.

In the opinion of Mr. W. CHARTERS, Director of the Bureau of Educational Research, Ohio State University, the experiments so far carried out have not sufficiently advanced to permit of expressing a considered opinion on this point. This opinion, when given, should be based not on the results of past experiments but on what it is proposed to attempt in the future, when teachers and pupils have become familiar with this method of education and when the conditions regarding presentation and technical adaptation have been improved; when the enthusiasm for this new system has been replaced by a more objective appreciation of facts (cf. "Radio in Elementary and Secondary Schools", in "Education on the Air", Ohio State University, Columbus, Ohio, 1930, pp. 127 ff.).

It is argued, however, that educational broadcasting necessarily implies "mass instruction", whereas education proper consists in developing the personal faculties of the pupils, a process which requires personal action along different lines according to the needs of these pupils. The teacher, who knows each of his pupils personally, is alone qualified to give this instruction and to seize the psychological moment at which he can bring the pupil to understand certain aspects of the question he is discussing. Consequently, broadcasting can never be more than a *supplemental method of education* (report submitted in 1929 to the Board of Superintendents of the City of New York, by Mr. Gustave STRAUBENMÜLLER, in the Report of the Advisory Committee on Education by Radio, Columbus, Ohio 1930, pp. 103 ff.).

The supplemental rôle of educational broadcasting is also evidenced by the fact that education calls for work conducted along definite lines; it is essentially "a work of training, something that is acquired and which cannot simply be given to the pupil", whereas education by radio is conducive to an attitude of passiveness on the part of the pupil and does not permit of his being trained in a manner that takes into account his personal abilities.

Broadcasting nevertheless offers very considerable possibilities for the teaching of subjects which do not yield well to textbook treatment. In the primary school, the programmes will therefore broaden the field of teaching and in some cases will make good any shortcomings in respect of pedagogical training, or even the scientific training of certain instructors. In the high schools, the advantages offered will be still greater, for example in the teaching of languages, history presented in the form of dramatised episodes, etc. (cf. "Educational Functions of Radio", by Mr. John COOPER, U. S. Commissioner of Education, in "Education on the Air. Second Year Book", 1931, pp. 141 ff.).

This opinion is shared by Professor William C. BAYLEY, of Teachers' College, Columbia University. This auxiliary or supplemental rôle is twofold and will assert itself : 1) in education properly so called, in the teaching of classroom subjects such as arithmetic and geography ; 2) in the broadcasting of programmes that awaken interest and bearing on the training of artistic and literary judgment. Education, however, especially in its initial stage, is essentially a question of exchanges of thoughts between the pupil and the teacher, and the condition *sine qua non* of such exchanges is that both the teacher and the pupil must be present. Broadcasting can be used for direct oral tuition but in order that this tuition may attain its maximum effectiveness, it must be seconded by the work of the teacher who guides his pupils in the study of the questions suggested by the talks.

One of the main advantages offered by educational wireless proper is that it enables teachers to acquaint themselves with the best teaching methods (cf. "What the future holds for broadcasting in the schools", by W. C. BARLEY, in "Radio and Education", the University of Chicago Press, Chicago, 1931, pp. 66 ff.).

"Teaching through the radio can serve only to complete the work of the teacher and be usefully adopted only on condition that the broadcasting sessions are of short duration and not too frequent." (cf. report communicated to the Institute by Mr. Watson DAVIS of the National Advisory Council on Radio in Education).

Referring to the views of educators, Dr. J. J. TIGERT, Honorary Commissioner for Education, observes that a great

number of professors and teachers are of the opinion that broadcasting cannot be used in education proper. Although this opinion is contested by just as large a number of educators, the majority nevertheless hold that broadcasting, which can render valuable service in the high schools, is scarcely suitable for teaching the junior classes of elementary schools (cf. Report of the Advisory Committee on Education by Radio, Columbus, Ohio, 1930, pp. 103 ff.).

However, educators unanimously agree with Mr. Ben H. DARROW, Founder and Director of the Ohio School of the Air, that, in its present stage of development, broadcasting cannot claim to fill more than a purely supplementary rôle. This new method of "thought transmission" should therefore be used only for those persons for whom it is likely to be of greater value than ordinary methods, whether it be a matter of allowing all schools to follow lessons given by broadcasters of exceptional merit, of supplementing the staff of each school by the addition of prominent representatives of the world of modern science or of furnishing pupils with an opportunity of coming into contact with, and of coming under the influence of, distinguished leaders of national and international society. Thus, school broadcasting will extend the school curricula, stimulate the intellectual curiosity of pupils and broaden their horizon by bringing them into touch with the living realities of their surroundings and by enabling them to hear the spoken words of historical characters that are brought back to life. (cf. "Radio — The Assistant Teacher", by B. H. DARROW, Columbus, Ohio, 1932, pp. 63, 70 and 72).

SUBJECTS BEST SUITED TO THIS FORM OF TEACHING
— PRESENTATION — ACTIVE TUITION

Music, which is essentially an auditory subject, is necessarily the subject which best lends itself to broadcasting. Moreover, musical broadcasts are of the utmost value to teachers. Next in order come foreign language courses, commentaries on current events, story-telling, literature with readings of selected poems, etc., history and geography, explanations of natural phenomena, etc. The use of radio for the stimulation of interest is, however, somewhat dangerous, for if the pupils regard it as a novelty

rather than as an educational agency, the value of these broadcasts is completely lost (cf. "Radio in Elementary and Secondary Schools", by W. W. CHARTERS, Director of the Bureau of Educational Research, Ohio State University, in "Education on the Air", 1930, pp. 127 ff.).

TEACHING MUSIC BY RADIO

Mr. Walter DAMROSCH, the distinguished promoter and director of the "Damrosch Appreciation Hour" has declared that musical broadcasts must, above all, aim at shaping the artistic taste of the pupil. The teaching of singing, and, *a fortiori*, lessons in the playing of certain instruments should be given in the classroom.

It is therefore of capital importance that these broadcasts be accompanied by talks and that they serve, as it were, as a practical introduction to the instruction given. In order that pupils may understand the work of a composer, they must be told something concerning his life and briefly initiated to his ideal; they should be shown, for example specimens of the personal work of the musician in his interpretation of certain feelings, stress being laid on the part played by the instruments used for this interpretation. These commented broadcasts differ therefore according to the class of pupil for whom they are designed — children between 9 and 11 years; pupils of the senior classes of primary schools; high school pupils; college students (cf. "Broadcasting Music with the American Nation as an Audience", by W. W. DAMROSCH, in "Radio and Education", 1931, pp. 166 ff.).

Pupils must hear a piece of music several times before they can appreciate and judge its value. Teachers should therefore provide themselves with gramophone records of the passages to be broadcast and the records should be played before and after the radio programme. In order that these recitals may not become boresome, the teacher and more particularly, the broadcaster who announces and comments upon the musical works selected for transmission, should take care to present them with a certain air of solemnity in order to impress the listeners as much as possible (cf. "Teaching Music by Radio", by P. W. DYKEMD, in "Education on the Air", Columbus, 1930, pp. 330 ff.).

TEACHING FOREIGN LANGUAGES

In the first lessons, the teacher should use words which all the pupils can understand immediately, otherwise they will find it impossible to concentrate their attention on correct pronunciation. Listeners should have the text before them. The teacher should read his sentences slowly before the microphone, carefully emphasising the different sounds and repeating each word several times. He may even invite the pupils to pronounce certain words after him ; he should then repeat the sentences, stressing the intonation and rhythm peculiar to the language. A rule of grammar may then be explained and applied to an example in the text. The pupils, either in the classroom or at home, should then work on the lesson broadcast and do the exercises given to them. In the following lesson, the instructor will give the answers to the questions previously asked, explaining the rules of grammar he has introduced, and give a dictation of a few easy sentences which he will correct in the next period ("An Experiment in teaching Foreign Languages" by W. S. HENDRIX, of the Languages Department, Ohio State University in "Education on the Air", 1931, pp. 190 ff.). After these broadcasts, tests may be carried out to ascertain the progress made by the pupils in pronunciation. For this purpose, records of the pupils' pronunciation at the beginning and end of the course may be made and the results compared with those of pupils in a class which did not take part in the radio course (control class) (cf. Extract from a report submitted by Mr. F. H. LUMBEX, of the Bureau of Educational Research, Ohio University).

TEACHING OF HISTORY

Rather than give isolated talks, it is preferable to choose a subject of such importance as to warrant a series of talks, as decided after due consideration by the History Committee of the National Advisory Council on Radio in Education. This Committee chose various incidents connected with the American revolution ; a selection was then made and the episodes outlined in collaboration with eminent professors. An endeavour was made to portray the trend

of ideas and the influence of economic and social factors in the representation of the leading characters, in order to convey a material and concrete picture. Certain outstanding events were also dramatised. These methods, which appeal to the pupils' imagination, make it possible to incorporate the teaching of principles in the representation of facts (cf. Report of the Committee on History, in "Radio and Education", 1931, pp. 216 ff.).

TEACHING OF THE SCIENCES

It is commonly held that broadcasting is more suitable for the transmission of scientific talks on general themes than for education in the true sense of the term. These talks may be given by famous scientists. Radio can also be used for spreading information on scientific life. For school pupils, certain features relating to natural phenomena, the life of scientists, etc. should whenever possible be given in dramatised form (cf. Report of the Committee on Science, *op. cit.*, pp. 258 ff.).

APPLIED PSYCHOLOGY AND VOCATIONAL GUIDANCE

In order to be effective, talks on general and social psychology should always be designed from the point of view of the individual development of the child. In these broadcasts, care should be taken to avoid the suggestions that have resulted from pseudo-psychology. With a view to guiding pupils in the choice of a career or trade, they should be given a brief enumeration of the qualifications which these professions and occupations demand, so that they may realise their own ability and so make their choice in full knowledge of the facts (cf. Report of the Committee on Psychology and the Committee on Vocational Guidance, pp. 234 ff. and 241 ff.).

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Generally speaking, the enquiry conducted by the Committee on education in rural schools shows that the programme for urban schools need not be different from that designed for the country schools, except in so far as

concerns agricultural questions (cf. Report of the Committee on Rural Education pp. 253 ff.). As regards the methods employed, it is generally recognised that dramatised talks give the best results : " dramatised episodes depicting scenes in history or representing certain facts constitute one of the most effective means of presentation " (cf. Report communicated to the Institute by Mr. Watson DAVIS, President of the Committee on Sciences, of the National Advisory Council on Radio in Education). When speaking before the microphone, the broadcaster should allow himself to be guided by certain principles which govern works intended for theatrical production : first of all, he should present his subject in such a way as to grasp the attention of his listeners and to fix the subject matter from the point of view of space and time ; secondly, the talk should be sufficiently dynamic and developed to hold the attention and stir the imagination (cf. J. W. ELWOOD, Vice-President of the National Broadcasting Company, " Education on the Air", 1930, pp. 19 ff.).

ADAPTATION OF BROADCAST PROGRAMMES TO THE GENERAL SCHOOL CURRICULUM

In order that broadcast lessons may become an integral part of the school curriculum, they must be made to synchronise with the latter. Furthermore, in each classroom subject, the broadcasts must correspond to the degree of knowledge reached by the pupils in each class. These handicaps serve to emphasise still further the purely supplemental rôle of educational broadcasting for schools. In adult education, these problems do not arise in such crucial form (cf. " Radio in Elementary and Secondary Schools", by W. Charters in " Education on the Air", 1930, pp. 127 ff.).

In this connection, it is pointed out that the school authorities can not only use radio programmes as a supplemental factor in classroom teaching but also as an instrument to arouse the interest and attention of pupils in new subjects, provided always that the interest thus awakened is focussed on a subject which meshes into the school curriculum (see the report communicated to the Institute by Miss Margaret HARRISON, Radio Research Bureau, Teachers' College, University of Columbia).

VOCABULARY LEVEL OF RADIO TALKS

Enquiries carried out in teaching circles have shown that radio speakers can never devote too much attention to the simplification of their vocabulary. When listening to the recital of a poem or to drama, the pupil can easily make good his imperfect understanding of certain words by relying on the context and his own imagination. Conditions alter, however, when it is a case of teaching in the normal sense. There is a natural but unfortunate tendency among teachers to express themselves in too academic and scientific a language. Broadcasters should make a point of using a simple and appropriate vocabulary that can be understood by the majority of the listeners ; the same remark applies to the construction of the sentences.

The radio lecturer may sometimes be influenced by the desire to enlarge the vocabulary of his pupils, but if he yields to this impulse he will very frequently fail to achieve the main object of his lecture.

It was found that in talks arranged for the benefit of children in the sixth grade, there was at least one word in each sentence which was unknown to 34 % of the pupils. Experiments carried by the Ohio School of the Air showed that 8 % of the words used in addresses were unknown to 29 % of the pupils (cf. *Vocabulary Level of Radio Addresses*, by Edgar DANE, of the Bureau of Educational Research, Ohio State University, in "Education on the Air", 1931, pp. 245 ff.).

COLLABORATION WITH LOCAL LIBRARIES (1)

While experience has shown that educational broadcasts develop a taste for reading among listeners, especially when the broadcaster recommends certain books of reference, it is none the less true that librarians can also render very valuable service to educational broadcasting organisations.

The library is, above all, an excellent reference centre for lecturers. No other institution is better qualified to act as a propaganda centre for radio ventures and programmes. The

(1) Cf. *The Broadcaster and the Librarian*, study by Mr. F.-W. DAUNY, published by the National Advisory Council on Radio in Education, Information Series N°. 3.

director of a local library draws up a list of the lectures to be broadcast by the different stations and places it at the disposal of its readers in order that they may select those in which they are more particularly interested. This list might also be communicated to the press, to local societies or even mailed direct to interested listeners as is the practice in the United States.

For his part, the lecturer may, following the enumeration of the subjects which he intends to discuss on the radio, indicate the books and articles that could with advantage be consulted in order to derive the maximum benefit from his lecture. These references should be added to the lists drawn up by the librarians and the books and articles placed on a special shelf at the disposal of readers.

The broadcaster may also recommend certain works in the course of his lecture, especially when he is delivering a series of lectures. Bibliographical advice of this kind may refer :

- 1) to one single book which is strongly recommended by the lecturer ;
- 2) to three or four books, with a brief analysis of their contents. In this case, it would be advisable to recommend listeners to apply to their local library for a list of these books and the books themselves ;
- 3) to six or seven books, with brief analysis, care being taken to repeat the titles of the works and the names of the authors.

Another method would be to publish the text of the radio addresses, followed by a bibliographical note recommending readers to obtain them from their local library. Some libraries have not only placed these books on a special shelf at the disposal of their readers, they have also organised discussion groups which meet on the library premises.

With a view to maintaining and furthering a taste for reading and, hence, to co-operating with the libraries, it is desirable that a part of the programmes transmitted by the educational broadcasting organisations be devoted to talks for the guidance of listeners in the choice of their books by means of reviews of recent publications. These talks could be given by the librarians themselves. They should, however, not confine themselves exclusively to recent books

but should compare the latter with older works dealing with the same subjects ; this comparison is scarcely ever made by advertising agencies. Mention should also be made of works which all persons really eager to learn and anxious to acquire a general culture should make a point of studying. Lastly, passages from notable works might be broadcast, thus inducing listeners to procure the books in question.

Persons Qualified to make these Recommendations.

Generally speaking, when talks on the choice of books are broadcast by high-power stations and, in consequence, intended for the ears of a large number of listeners, it is preferable to engage the services of a celebrity whose standing will be more likely to impress the listening public. When directors of libraries are invited to the studio, they should be put through a radio test beforehand with a view to ascertaining whether their voice is of the proper broadcasting quality.

To avoid monotony, these talks might with advantage be given in the form of dialogues on the contents of the books recommended, the personality of the writer, etc. Discussions might also be organised on certain points of view held by the author.

METHODS OF CONTROLLING THE RESULTS OF BROADCASTS

The sending out of questionnaires may serve its purpose when it is a question of collecting facts. The same is not true when the object is to obtain opinions and suggestions or the interpretation of facts. The most efficient method is that which consists in detailing a person to interview a certain number of experts, along the lines adopted by the National Broadcasting Company for example, or, alternatively, to meet these experts assembled together in local groups (cf. "Problems in a Radio Survey", by John M. RUSSEL, of the Carnegie Corporation, in "Education on the Air", 1930, pp. 290 ff.). In the opinion of Mr. C. M. KOON, Assistant Director, Ohio School of the Air, the teachers using the radio lessons are the logical persons from whom to obtain the data for measuring the effectiveness of the radio

lessons. They should therefore be asked, at the beginning of a series of lessons, to note the following items: pupil attitude during the broadcast, subject-matter, method of presentation, etc. (Cf. *op. cit.*, pp. 275).

EXPERIMENTAL SCHOOLS

In order to judge of the value of the results obtained by radio lessons, a comparison should be made between the results obtained in a group of schools which have followed the broadcasting course of instruction with those obtained for the same subject from a group of pupils in a control school. First of all, the results obtained in the experimental groups at the beginning and at the end of the course should be compared; next, these results should be compared with those obtained at the beginning and end of the ordinary course in the other schools (cf. "The Wisconsin Plan for Radio Development", by H. L. EWBANK, Chairman of the Radio Research Committee, University of Wisconsin, *op. cit.*, pp. 284 ff.).

RESEARCH CENTRES AND CO-OPERATION BETWEEN THESE CENTRES (1)

A number of institutions in the United States are at present engaged in research work in the matter of radio education in permanent centres. We may mention, in particular, the Nation Advisory Council on Radio in Education, New York; the National Committee on Education by Radio, Washington; the Radio Division of the United States Office of Education; the Department of Rural Education of Teachers College, Columbia University, and the Bureau of Educational Research of Ohio State University.

With a view to co-ordinating this research work, the last named organisation centralises information and publi-

(1) See *Research Problems in Radio Education*, by W. CHARTERS; published by the National Advisory Council on Radio in Education, Information Series No. 4, New York, 1932. This booklet contains a list of the principal research centres and a summary of the problems examined.

cations concerning the work undertaken in this field in the United States. This information is communicated to every institution and to all persons engaged in educational radio research, thus enabling them to follow the progress of this work, to keep themselves informed on questions under consideration and mutually to assist each other in their investigations.

TEACHING OF THE AIMS OF THE LEAGUE OF NATIONS

The Women's International League for Peace, acting in collaboration with the Progressive Education Association, has organised a series of talks on the Education of the International Spirit and on a number of international questions. These addresses are given by persons of repute, and in order that they may be as effective as possible, listeners are invited to send in questions that have arisen in their mind as a result of the talks. Answers to these questions are given in later broadcasts or by letter.

URUGUAY *

School broadcasting has been officially organised in Uruguay for the benefit of primary schools and programmes have been given regularly since 1931. Broadcast lessons are followed by the schools both during and after hours and, up to the present have been of a purely supplemental character.

The subjects chosen for these broadcasts are taken from the ordinary school curriculum, which is thus extended and developed in fuller detail. These lessons have so far been given in the form of simple talks but it is proposed to make use also of the dialogue method of presentation and to arrange for a group of pupils to be present in the studio, so that the broadcaster may give his lesson in the form of a conversation.

The technical inspection division of the Education Council is responsible for the preparation and execution of the broadcast programmes and works in collaboration with a group of specialised teachers and literary experts.

Although instruction in the aims of the League of Nations figures in the programmes of teacher training schools and ordinary schools, no use has so far been made of broadcasting in this connection. The annual message of goodwill sent out by the school-children of Wales has, however, been broadcast by the Uruguayan stations.

* From the report submitted by School Broadcasting Bureau of the Ministry of Public Education.

YUGOSLAVIA *

I. — PRIMARY AND SECONDARY EDUCATION

Although the question of broadcasting is still under consideration, it has been possible to organise a certain number of wireless lessons for the *primary schools*. Up to the present, it would seem that the subjects best suited to this method of teaching are : music, history dramatisations, foreign languages, geography, health and hygiene, ethics and citizenship, travel talks, etc.

To be really beneficial, these broadcasts require careful preparation : 1) preparation of the lessons, and 2) preparation of the pupils by their school teacher ; in the latter case, detail must not be laboured and the preparation must not result in any loss of time for normal classroom work.

II. — INSTRUCTION IN THE AIMS OF THE LEAGUE OF NATIONS AND PROMOTION OF THE INTERNATIONAL SPIRIT

For promoting the international spirit among children, talks on history, geography, folklore of the different peoples and musical programmes introducing their national songs and masterpieces are extremely valuable. To develop this international spirit, competent organisations in each country should make a selection of the literary and artistic works which represent their civilisation and should organise broadcast talks on these subjects. The talks should then be translated into different languages and relayed to foreign transmitters.

* From a report by M. MILOCHEVITCH, Director at the Ministry of Public Education.

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