

SPECIAL VISUAL EDUCATION ISSUE

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THE EDUCATIONAL RECORD

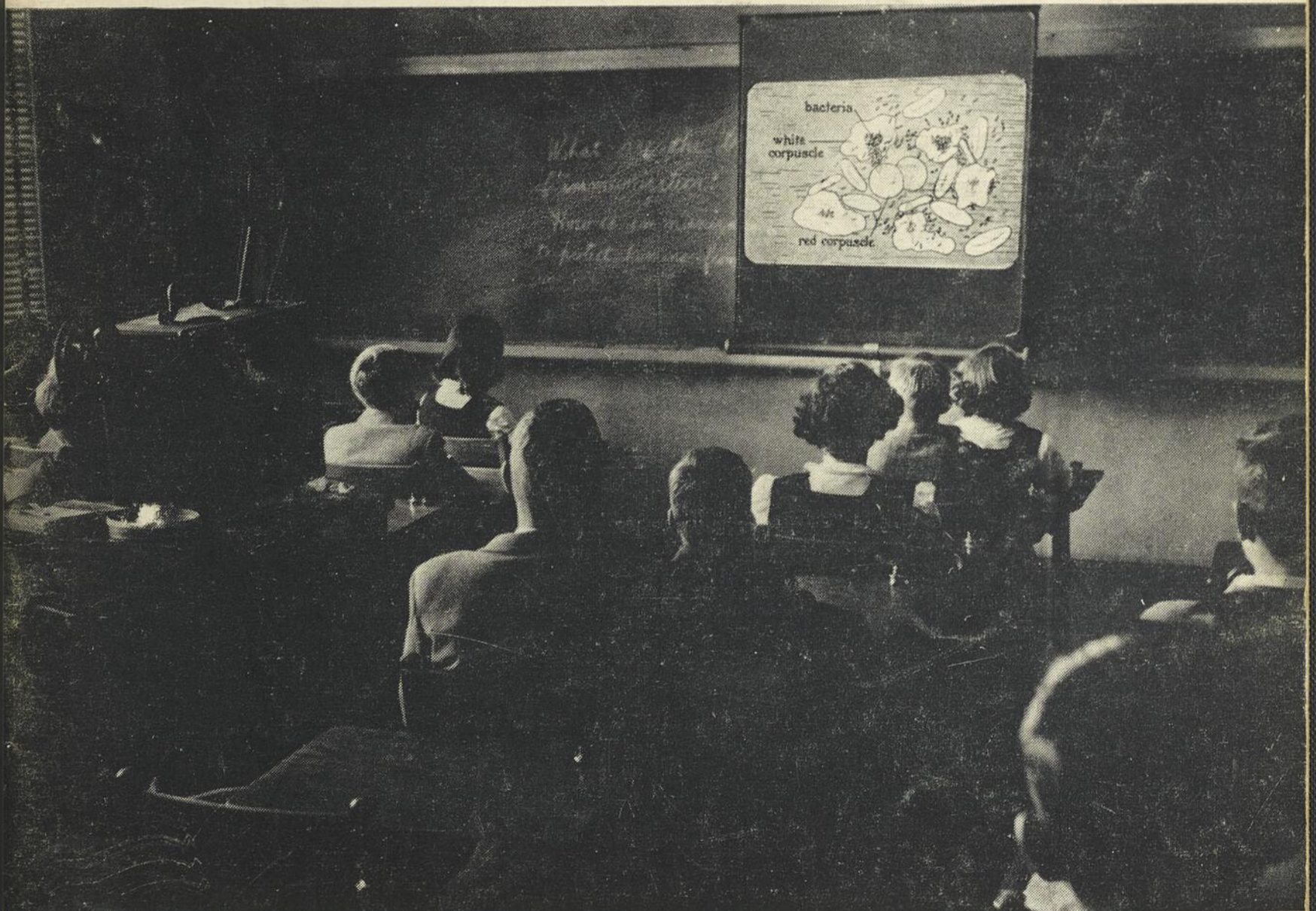
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FILM PRESENTATIONS HAVE BECOME INCREASINGLY POPULAR MEANS OF TEACHING

CHRISTMAS

1948

"Peace on earth to men of goodwill."

When will confusion cease?

Where are the men of vision today,

The modern Magi to lead the way

To the star-crowned shrine of peace?

"Peace on earth to men of goodwill,"

Chanted the angel throng,

And God's own glory shone around

Poor shepherds kneeling on the ground,

Amazed at the Angels' song.

Christmas Day, a day of goodwill,

When for a little while

Man forgets antagonistic creeds

And thinks in terms of human needs,

Showing love for his fellow-man in deeds

That strengthen and reconcile.

Richard Callan,

High School of Montreal.

THE EDUCATIONAL RECORD

October - December, 1948

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THE EDUCATIONAL RECORD

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Vol. LXIV

QUEBEC, OCTOBER-DECEMBER 1948

No. 4

EDITORIAL

SPECIAL VISUAL EDUCATION ISSUE

The Special Radio Issue of the Educational Record of July-September 1947 focused attention so closely upon the advantages of school broadcasting that it has been thought advisable to bring Visual Education to the fore in the same way by devoting a special issue to this subject.

That the moving picture has great appeal may be judged by the fact that the average weekly attendance at Canadian movie theatres is above 3,000,000. People frequent picture shows mainly for amusement or relaxation, but many go to learn. It is not the function of the school to amuse or to encourage undue relaxation, but it has been demonstrated adequately that the film can be used as a teaching medium, and that, next to seeing the objects themselves, the film is frequently the most potent form of visual education. Many people are indeed reserving the term "Visual Education" for screen representation alone, though that is quite unwarranted. This issue, however, is wholly concerned with the educational value of the film.

It is almost sixty years since Thomas A. Edison created a practical machine to take photographs at such a rate that they would stimulate movement, thus supplanting other efforts of a less practical character. The first long spectacular film, "Quo Vadis", produced in Italy the short period of thirty-five years ago, has been followed by an increasingly improved technique which has made the appeal of the film universal. When the sound strip was attached some twenty years ago the attractiveness of the movie was increased enormously. The armed services took advantage of the moving picture for quick and sure learning. The school has not been nearly so eager to profit by this means of education, for the number of projectors in the schools is less than those used by the army during the war, but many wise teachers are giving their pupils the benefits of this means of instruction.

Just as there are difficulties of choice of good programmes and vagaries of clear reception in radio programmes, so there are difficulties in the selection of the right films. Moreover, the difficulty of securing a suitable dark room is sufficient to discourage many teachers from availing themselves of this teaching device as often as they would like. When all the factors are fully resolved, however, both teachers and pupils usually agree that the time spent in viewing the film has been well worthwhile.

The school has always suffered from too much verbalism, and too many ill-prepared lessons. In the film the visual element is present, that element which allows the quickest and surest means of learning and of retention. More-

over, great care is exercised to ensure good scripts. There is no High School in the Province of Quebec that is without a good moving picture projector and such machines are also part of the equipment of many of the Intermediate and Elementary schools. Instruction in how to use the machines has been given in teacher training institutions, particularly in the Summer School, where specially qualified instructors have been engaged and where the teachers have had suitable opportunity to learn to operate the newest machines.

The Film Library of the Department of Education was started in 1937 with an initial expenditure of \$2,500. The first printed catalogue issued in 1941 listed 1000 filmstrips and 500 sound and silent films. Though the number of filmstrips has not been increased substantially, the number of moving picture films is now double that stated, the cost of which, with duplicates, approximates \$100,000. A well annotated catalogue and supplement can be obtained free by any teacher upon request.

Too many teachers do not realize the effective assistance that educational films can offer in classroom teaching and, as a consequence, they deprive their pupils of valuable opportunities of learning. Such teachers should consider the unique power of films to take a pupil to distant places and see both usual and unusual scenes, to show through time-lapse photography a plant actually growing, to present through slow motion what happens when a ball is hit by a club, to demonstrate processes only comprehensible when the motion can be seen, such as weaving, and, by animation or moving diagrams, to display an endless number of complex occurrences, such as blood flowing through the arteries, electrons moving along a conductor or the human heart beating. By means of the film a pleasant and profitable means of learning has been presented to pupils. Complicated processes such as the working of the turbine that have always been difficult to explain verbally are now pictured in cross-section and are grasped easily and taken palatably by pupils. A dynamic form of presentation is thus open to all teachers who wish to have their pupils understand fully whatever is available through the motion picture.

Two great handicaps prevent the film from being as useful as it should be. The first is the small number of copies sold of a particular film. Any film of which as many as three hundred copies are sold is exceptional. This means that the cost of its production must be under \$8,000. When one compares this cost with the million dollar or more Hollywood productions one can easily see why it is difficult to provide the best possible in school films. The second handicap lies in the inability of almost all teachers to use the film effectively. When teachers learn to use films as they should and when the sale of classrooms films increases, visual education will advance much more rapidly.

Many aids are available for teachers who wish to improve their techniques. Some are contained in the articles in this issue. Teachers who are uncertain how to thread a machine can write to the Film Library or to the manufacturer requesting a threading diagram. The film T-682, "Use and Care of the Filmosound Projector", gives many hints even to experienced operators of projectors.

Local Teachers Associations could profitably devote a part of their year's programme to the problem of using films effectively. The Department of Education will be glad to send a representative to assist at any meeting held for this purpose.

THE SCHOOL MOVIE

Iris Hamilton, B.Sc., High School for Girls, Montreal

In most of the high schools the film has been accepted, as it rightfully should be, as an essential part of the school equipment and is in almost as constant use as the blackboard. A teacher employs the blackboard as a means of giving visual as well as oral instruction. Let us consider a lesson in mathematics. No matter how clearly, slowly and frequently an explanation is given, many pupils are not able to grasp the work with sufficient understanding from the mental picture formed in their own minds. When pupils are able to observe each step of the explanation as it is developed before their eyes on the blackboard, however, they have been given invaluable aid not only in understanding the lesson but also in retaining it.

There are few, if any, school subjects which cannot be aided by the use of the blackboard. Pictures and illustrations in text books help to explain the meaning of the printed word. Just as the blackboard and text book illustrations are used as a means of visual education, so is the film an equally valuable aid to education. The film is often regarded as a many times improved blackboard or animated text book illustration. It is the method by which we strive to instruct by means of the eye as well as the ear.

There are those who decry the use of the film and claim it to be a "lazy man's method" of teaching. If those teachers could be afforded the opportunity of learning the amount of time and study that must go into the preparation of a lesson before the film can be shown to a class of pupils, they would realize that the word "lazy" is not only an erroneous but also a ridiculous term to apply to such a method of teaching. The film is not used to teach the lesson but to give visual and oral aid in understanding and learning it.

The film may be used to introduce a subject, to teach the main part of it or to review a lesson. The teacher in his discretion decides which of these methods is the most suitable. In some cases, the film need only be shown once, while in other instances two showings with an intervening question and discussion period are needed. A method that has proved to be successful with many science topics is running the film through first as a silent and then as a sound picture.

All films should be carefully previewed by the teacher before they are shown to the class. It is also advisable to prepare a suitable list of questions for the class discussion following the showing. These steps entail many hours of after-school work by the teacher, but experience has proven that the results more than compensate for the extra work involved. The film library catalogue or the card index in the school office gives much useful information concerning each film, and this is an important time-saver to the teacher in selecting films for preview.

Films have been used in our schools with most satisfactory and successful results for many years. Teachers are making use of films, to whatever extent possible, to help bring more concrete and lasting knowledge to the pupils. I have used the words "to whatever extent possible" because there are obstacles in the way of using this visual aid to education as completely as it could be used.

One very important obstacle is the expense and difficulty in obtaining movie projectors. At the present time, it is not possible for every school to be supplied individually with full equipment. Another obstacle is the lack of space in the schools. This is indeed a very serious and important obstacle. It is convenient to have a special room equipped with suitable electrical plugs, dark curtains and a comfortable seating arrangement where each pupil can see clearly and hear distinctly. Crowding a large number of pupils into a room where there are insufficient seats makes the task of obtaining and maintaining their interest an exceedingly difficult one. The smaller the group the more satisfactory and thorough are the results, so that showing the film to more than one class at a time considerably lessens the constructive value of the lesson.

The animated diagram film or the animated cartoon type lends itself admirably to most school subjects. It should, of course, be used in conjunction with, or as part of the regular film. A film of this sort aids greatly in the teaching of geography. It would, for example, be valuable in the study of canals and their system of locks. The teacher can draw diagrams on the blackboard and refer to pictures in the text book, but still a great deal has to be left to the pupils' imaginations, and the possibilities of erroneous impressions are great. This danger can be avoided by showing the pupils an animated film depicting a boat going through a system of locks. The mechanism will be much more easily understood as the pupils watch the animated model moving through the locks as the explanation is given step by step by the teacher. Ideally, this would be followed by a regular film showing different canals and locks in various parts of our country and of the world.

The teaching of the important river systems of the world can be greatly aided in this way. It is difficult to impress upon young minds the immensity of such a subject. A film, however, can demonstrate by the diagram method the direction in which a river flows and how one branch empties into another, and then by showing the river and its branches can give an accurate idea of the appearance and size of what, on a map, is represented by a mere line.

In teaching the solar system much has to be left to the imagination of the student unless some means is used to show accurately the many different motions within the system. Diagrams drawn on the blackboard suggest in part one or more of these motions but they cannot give an adequate picture of the various motions going on simultaneously. Some very good working models of the solar system are available, but to supply every school with one is difficult. To build a planetarium in each school would probably be quite impossible. Several good films solve this problem, however, because they are readily available to all schools at very short notice and, more important, they present a living and complete picture of the solar system in all its complexity.

Various other aspects of geography such as volcanic action, earthquakes, foreign countries and their customs, and land and sea formations can be clarified by the use of films. Impressive word pictures of these things can be painted but it is difficult for the young mind to see these pictures, to visualize, for instance, the rate at which lava flows or its terrible powers of destruction, whereas a film can actually show all this and leave very little to the faulty pictures of the imagination.

There are innumerable opportunities for making use of the film in biology. The study of the human anatomy can be made more interesting and lifelike this way. The bone structure and blood circulation of the body can be made very simple by the animated diagram film. Insect and plant life can be greatly simplified by using techni-coloured diagrams and regular films. These are very beneficial in teaching the various parts of insects and plants. Here the film offers the added advantage of greatly magnified pictures and the fact that action may be slowed down to demonstrate the operation of parts of a machine, or accelerated to show animal or plant growth. The purpose of the film is not to do the actual job of teaching any of these things. It has the supplementary, though most important function, of helping both the teacher and the pupil. A film shown without any accompanying or previous instruction or discussion loses a great deal of its educational value, but used in its proper place it is invaluable. Any method of teaching which serves the purpose of promoting and stimulating the interest of the pupil in his school work by making it easier for him to understand it is indeed worthwhile.

In the field of physics and general science there is great scope for the use of the school film. We have some very excellent working models to demonstrate the principles of the various units of this subject, as in force and pressure, electricity, heat transmission and others, but, as many teachers have discovered, the pupils frequently operate the models without really understanding them. The film can be an important aid here. It can start with the model the pupils are using and, by means of the cartoon type film, review the various steps of the operation and go on to show its application in more complicated machines. This is followed by views of actual machines set up in factories and plants so that the pupils will obtain a correlation between the theory they are learning and its counterpart in every day existence. Teachers who constantly strive to show the correlation of the academic and the practical sides of education find that this is one of the things films do best.

In the study of electricity the harnessing of water power and its subsequent transference into electricity is a difficult transformation of energy for the average student mind to grasp. A carefully arranged film which shows the steps in the change can make the whole transformation clearer and more realistic to the pupils. The study of current flow, electro-magnetism, the telephone and radio can be greatly simplified in the same way. Realism is a most important factor that needs to be injected into the teaching of any subject matter. The greatest stumbling block in the education of young people is their tendency to regard academic learning as irrelevant to the practical world. We must be ready and willing to use any means at our disposal to combat this idea.

English, history, and music are well served by films. Several modern and Shakespearean plays recently filmed have proven a very successful aid in the teaching of English literature and diction, as well as of dramatics. There are also some excellent historical films which serve to bring realism to the school history book. Teachers have found that films of this kind play a great part in developing an appreciation of these subjects. Colour and sound films lend themselves especially to the teaching of art and music.

The common complaint among many students learning algebra, geometry and the other branches of mathematics is that these subjects are of no practical use to them in the business world which most of them will soon enter. Films give much needed aid by showing actual instances where these higher forms of learning are essential.

Many of our high school students have only vague plans for a future vocation, mainly because they have had little or no opportunity to learn of the many and varied types of work. The vocational guidance departments of our schools have done good work in this field, and here again the film has proven a valuable aid in stimulating the interest and curiosity of pupils concerning different kinds of employment. In this connection great care should be exercised to avoid those films, sometimes called "propaganda films", which show only the glamorous and pleasant side of a position. A film, if it is to be of any use as a vocational guide, must show not only the advantages but also the disadvantages of a position, in addition to the mental and physical requirements, the working conditions, the salary and opportunities of promotion.

The acquiring of good manners, correct behaviour and safety-first habits has a very necessary place in the education of a pupil. The home, of course, is the natural place for these things to be taught but we cannot expect the home to do the entire job alone, inasmuch as a boy or girl spends about half the day for ten months of the year in school. The school can do much to develop these very important traits of character, but, unfortunately, instruction of this sort is given usually in the form of lectures. The difficulty here is that pupils are prone to regard them as just that—"lectures"—lectures that must be listened to in school but which otherwise have no relationship to their own existence. The film, I believe, can supply this much needed connection. It can bring to life on the screen the words of parents and teachers by giving actual examples of good manners and of safety-first for the children to copy. In showing films of this kind it is wiser to show only the correct method of procedure because when both the right and wrong ways are shown, pupils are apt to forget which is which and consequently all value of such films is lost. Much has been said and written about the influence the movies have on the young minds of today. Since the influence of films is great, why should not the school use this same medium to help make that influence a good one? These movies could include correct behaviour on the street car or bus, in the school and home, courtesy toward others, courtesy towards older people and safety-first in crossing streets, swimming, handling sharp instruments.

In the past there has been too much of forcing education into disinterested and unresponsive minds. The acquiring of an education, however, cannot be made an effortless or simple task for the average young mind, and still less for those of below average intelligence. Lack of understanding creates a lack of interest and a disinclination to learn, thereby making the teacher's task more difficult. Films are not a device which will 'spoonfeed' education into pupils, but they are a means for helping awaken in pupils an interest in their work and a desire for further knowledge. For this reason alone the school movie is well worth the time and effort put into it.

METHODS FOR MODERN VISUAL AIDS

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The use of visual aids is not a new development in educational practice. Although their widespread use to-day indicates their importance in the educative process, they were first introduced by Comenius in the seventeenth century when he initiated the use of pictures in children's textbooks. The soundness of his bold venture three centuries ago is well confirmed by an examination of the well-illustrated textbooks in use today.

The term visual aids includes, in addition to motion pictures, many projection and non-projection devices, all of which may be called tools of learning. In their particular characteristic of being visible, the value of visual aids is found. In the first place, visual aids provide for the pupils concrete pictures portraying many vivid details which in abstract presentation are vague and unreal. Another value of visual aids is the economy of time which they effect. One picture can easily tell to the pupil what a thousand words cannot do well. Scientific study has revealed that through the use of visual aids pupils not only understand facts more fully, but also retain them better. Probably the most important value of all, however, is the pupil interest which is aroused through the use of visual aids. The importance of interest in the learning process cannot be stressed too much and, as stimuli of interest, visual aids have their greatest value.

Since the use of illustrations was introduced, many other types of visual aids have been developed. Among these are: maps and globes, charts and graphs, posters and drawings, mounted pictures, objects, specimens, models, lantern slides, motion pictures, stereographs, and film strips (listed in order of use according to a nation-wide survey conducted by the Office of Education in the United States in 1936). Motion pictures would probably stand higher in such a list to-day, because of the greater availability of films and equipment and the greater interest in their use for educational purposes. The most recent development has been the introduction of sound to motion pictures making sound films available as combined audio and visual aids. It may reasonably be expected that, in a comparatively short time, television may come to the classroom to join the many visual aids now in use.

As each new type of visual aid was introduced, special methods had to be devised for its use so that its full value and contribution to education might be realized. This has been, and continues to be, an important task of educators. Just as new patches should not be applied to old cloth, so new types of visual aids should not be used with old techniques. The improper use of any piece of equipment results in misdirected effort and needless waste of time. Lest these inefficiencies arise, each teacher should be familiar with the proper methods of using visual aids for educational purposes.

Since most of the visual aids mentioned above have been in common use for many years, teachers are quite familiar with them. The techniques for using the most recently developed type of visual aid, the motion picture, are

probably understood the least. It did not develop as an educational factor of modern society but as a theatrical, recreational one, and it was, therefore, some time before its potentialities as a visual aid became apparent to educators. Another reason for the rather slow adaptation of the motion picture to educational usage was the characteristic hesitancy with which teachers and educational authorities accept new developments and discoveries. Until new devices have been rigidly tested and found satisfactory, teachers hesitate to experiment with them in public institutions at public expense and with their pupils' educational interests at stake. Because of this slow beginning, motion pictures are not yet understood or utilized as fully as they should be.

At the outset it should be stated that motion pictures can be used as visual aids in almost every subject of modern curricula and for all ages of learners. Careful research and experimentation concerned with the value of motion pictures for instructional purposes have revealed convincing proof that films are valuable as visual aids. One authority found that the use of films increased the efficiency of learning geography from 25 per cent to 50 per cent. In another study concerning the use of films in teaching American history it was found that pupils who saw the series of films learned 19 per cent more than others and learned more quickly; remembered 12 per cent better; participated in class discussion 10 per cent more often; and, outside of their classroom work, voluntarily read 40 per cent more supplementary material in the subject. Another investigator found that general science at the Grade Nine level improved 20 per cent through the use of sound films. Marked improvements have also been noted in the work of natural science and music through the use of films. Other subjects in which motion pictures can be used to advantage include health and safety, English and foreign languages, commerce and industry, art, and vocational guidance.

Motion pictures can be used with learners of all ages from kindergarten and primary pupils of the elementary school to students of universities. Films have been found particularly helpful in primary grades to overcome shyness and reluctance of some pupils to enter into discussions and activities. Difficult problems in beginning primary reading programmes have frequently been solved by the conversational and reading activities following an interesting film. Nor is the educational use of motion pictures restricted to schools and its pupils, for documentary films are well received by adult groups through the regular commercial channels in theatres and through the wide distribution of films by the National Film Board.

In school the motion picture can be used in a variety of ways: (1) to initiate a unit of instruction, (2) to present the facts and concepts, (3) to enrich or extend the unit, (4) to provide a rapid survey or general background, (5) to summarize or review, (6) for club programmes and special projects, (7) for assembly programmes, (8) for teacher-training projects, and (9) for parent-teacher and other community group meetings.

For each of the above uses of films there are particular points of method to which special attention must be given. Four general principles of teaching with films, however, apply in all cases. In the first place, the film must be assigned its true role from the educational viewpoint; namely, a visual aid to

instruction and learning. The motion picture is not, and can never be, a substitute for the teacher. The teacher must still teach, whether or not motion pictures are used. Films cannot in themselves provide a well-rounded education, but they can assist the skilful teacher to do this important task more efficiently. The second general consideration is that the motion picture, when used properly in the school, must be an integral part of the lesson structure. The use of visual aids of any type is not an isolated teaching method, and motion pictures used as visual aids should not be considered by the pupils to be special entertainment. For this reason, the motion picture should be brought into the lesson only after the teacher is convinced that it has a definite contribution to make to the unit of instruction. The inclusion of motion pictures in the lessons must be carefully planned. Thirdly, such planning automatically implies the need for exact timing of the presentation. To show a film a few days earlier or later than its proper time in solving the problem destroys much of its value. In order that this accurate timing may be possible, films obtained from the Department of Education Film Library may remain in the borrower's possession for one week. Borrowers should make full use of this time to present films effectively at the proper time. The fourth important consideration concerns the place of showing motion pictures. For most types of lessons, it is generally agreed by visual education authorities that the classroom is the best place for instructional use of motion pictures. The classroom is small in size and the familiar environment invites close attention to the films. The pupils tend to look upon them as important to their school work and not merely as entertainment. By using the classroom for the entire lesson its continuity is not broken as it would be if the pupils had to move from one room to another and back again.

In addition to understanding the general principles concerning their use, the teacher should also be familiar with recommended steps to be followed in using motion pictures in the school. Before showing a motion picture to a class the teacher should always preview it himself. From the preview the teacher is able to note the content and organization of the film material, and can determine the best way in which to make good use of it. The preview also gives the teacher an opportunity to discover whether or not the vocabulary of a sound film is suited to the understanding of the pupils. The preview can avoid needless waste of class time if the film is not as useful as anticipated.

Although handbooks do not accompany many of the available films, nevertheless, if they are provided, they should be checked for suggestions on how to use the films. Handbooks frequently present valuable supplementary data not discussed or shown in the film, but valuable for a fuller understanding of the topic.

The teacher who has previewed a film and checked the handbook is usually well equipped to introduce the film to the pupils. Before the actual projection, however, some important groundwork must be prepared for its satisfactory reception. During a series of lessons on any topic there are certain to be some doubts, questions, and problems in the minds of the pupils which frequently can be satisfied by a good film. In a lesson prior to the presentation of the film, the teacher should assist the pupils to establish definite purposes for seeing

it by inviting them to submit their questions to him in writing. In this introductory step the teacher is also able to suggest some very important but less obvious problems which should be considered by the pupils.

In the lesson that follows the teacher should take a few moments immediately before the projection to generalize the specific questions of the pupils so that the attention and consideration of the entire class may be directed to those facts which should be stressed. During the actual showing of a sound film few or no remarks should be made by the teacher unless the commentary does not adequately describe the pictures or the vocabulary is not suited to the comprehension of the pupils. In the use of silent films it is customary for the teacher to provide comments whenever the sub-titles are too difficult to be read or understood, or whenever the sub-titles do not explain the pictures sufficiently.

Immediately following the showing of a film there should be a class discussion to check on the understanding of the purposes previously set up. Because impressions fade rather quickly, this is very important if the showing is to be effective. Special effort must be made to fix in the memories of the pupils the material which is presented so rapidly by films. During the discussion period the pupils should be given opportunities to answer both the general problems and their own specific questions. Plans for future activities should be made at this time also. If a film has been of any value, interest will have been aroused to the point that the pupils will be ready and eager to carry on.

The last step in a film lesson involving new activities is frequently, though not always, a sign of how effective the film has been as a visual aid. A good educational film answers questions, increases the store of information, and also motivates further activities. The many and varied forms of these activities provide opportunities for correlation of subjects and for the pupils to express themselves and develop their individual abilities. This correlation is found in progressive schools where formal education becomes more and more like real life which also displays many complex and interrelated activities. These follow-up activities may lead to research and reading in library books, in publications and government departments. Pupils find opportunities to express themselves and develop artistic abilities through the preparation of posters, murals, and booklets concerning things which they have seen in films. The writing of notes and articles provides practice in composition and language. Activities requiring models also provide opportunities for developing skill in handwork. If the films have been used effectively planned activities must follow.

The best results with visual aids can only be assured through the enthusiastic efforts of teachers to understand and use the methods prescribed by competent authorities in the field of visual education. Regarding the use of motion pictures as visual aids the following references, available from the Film Library, or the Professional Library, Department of Education, Quebec City, are recommended for further reading and study:

1. "Using the Classroom Film" (T-697) — a 16 mm. sound film prepared by Encyclopaedia Britannica Films.
 2. Brunstetter, M.R.: "How to Use the Educational Sound Film".
 3. Clark, E. C.: "The Use of Visual Aids in Teaching".
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SOME DESIRABLE FEATURES IN MOTION PICTURE EQUIPMENT

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The use of film in teaching has been likened by a prominent educationalist to the ubiquitous blackboard. Just as the value of a blackboard depends largely on the amount of use it receives, and the ingenuity and skill displayed, so the film is limited by the way in which it is used. Poor blackboard work is harmful; so is poor film work. Given intelligent and deft utilization, however, films can help to do innumerable teaching jobs more quickly and better than could be done by the unaided teacher. Second only to the teacher in making films effective is the equipment.

Good demonstrations go smoothly. How often sales talks have fallen flat and lessons collapsed because the salesman or teacher did not have his equipment operating efficiently! Sometimes the operator is at fault; sometimes delays or breakdowns are due to "technical difficulties beyond our control". Untrained or inexperienced operators can be trained in a short time, but if the equipment is inadequate or inefficient, there is usually a long-term handicap.

The purchaser of motion picture equipment who wishes to provide his operators with the best that is available for their particular needs might well set up three standards: reliability, simplicity and versatility.

It is the purpose of this article to consider some of the desirable features of film projection equipment now being advertised. A cross-section of manufacturers, including old-established firms as well as less familiar names in the field of projection equipment, has been reviewed, and the specifications of their equipment evaluated on the basis of practical experience. It is hoped that this evaluation will prove useful to anyone planning to purchase a school projector.

First, consider reliability. Anyone who has obtained long and trouble-free service from an early, established make of projector naturally favours a new model by the same manufacturer. The experience of other users of projectors, however, is a valuable guide. School boards in large cities have occasion to purchase in quantity, and frequently do not buy one make only. Thus, by getting in touch with their visual education departments one should be able to obtain first-hand information as to how certain machines have stood up under a variety of conditions. This is an application of the well-known advertising slogan, "Ask the man who owns one".

One manufacturer advertises that his projector was dropped ten times on a concrete floor from a height of eighteen inches, and was undamaged afterwards. This may offer advance protection against a possibility in the use of projectors in schools, but it is, of course, not the only gauge of reliability. The lifetime guarantee of another make, now well established on the market, is a good estimate of reliable service. In addition, the type of projector which operates without removal from the carrying case has obvious advantages in protection from injury to the vital parts, and less likelihood of being tipped over by catching on someone's clothing.

A machine with a small number of working parts seems to have advantages. The point is made by a number of manufacturers that rewinding can be effected

without moving the spring belt on the pulleys, or reversing the film spools. This lessens wear and tear on the belt (a frequent cause of stoppages), and at the same time simplifies the operation of the projector.

Although reliability presupposes a minimum of breakdowns, it is as well to have a projector which can be serviced easily. Lamps that are accessible, and an amplifier unit which can be checked quickly and removed if need be for return to the dealer for more expert attention, are features that save time. In cities, the dealer who offers a "loaner" unit while he repairs the original has a good sales point. When equipment is out of commission for a couple of weeks, teachers who conscientiously plan their film programme ahead of time are discouraged and pupils lose the benefit of seeing a film when their interest in the topic is greatest. Speedy and reasonably priced servicing, together with an adequate stock of spare parts, means just as much to the purchaser of a film projector as it does to the buyer of a new automobile.

Next, look for simplicity. There is something about operating a machine which seems to strike terror into otherwise courageous spirits. Especially is this true in operation of motion picture projectors, for the relentlessness of the mechanism which keeps on winding, even though the film may be piling knee-deep on the floor, makes some teachers shy away from such a hazardous undertaking. Furthermore, even the most experienced must admit having been puzzled to know whether a film has been rewound wrong side out, and, if so, just how to get the right side where it should be. There is good reason for choosing a simply operated machine.

Furthermore, the equipment should be light enough to be moved easily from room to room and up and down stairs by a lady teacher. Many projectors weigh less than forty pounds, while the speaker, as a separate unit, is much lighter. One single-unit machine weighs as little as thirty pounds, and for that reason should be especially useful in the school which requires equipment for classroom use only. In school buildings where a service elevator is something only to be visualized for the future, a lightweight film projector, amplifier, and speaker, whether in one or two carrying cases, is essential if the best use is to be made of the equipment in day-by-day teaching.

It is recommended that for best performance the speaker be placed near the screen and off the floor. For this reason, and because lightweight equipment is not always as flexible, weight alone is not a safe guide, and two units may be preferable to one.

Most makers advertise easy threading of film and simple controls as strong points in their particular product. The best way to find out if these claims are well founded is, of course, to try the operations oneself. If one is mechanically inclined, some allowance should be made for those who are not. Intending purchasers should watch for such desirable features as wide-opening sprocket shoes, which allow the film to be threaded without inserting it between tight-fitting guides, plenty of room for the necessary loops before and after the film-gate, accessible controls, such as the framing device which centres the aperture over the film, and a pilot light for operating in the dark.

It should not be possible to operate the machine with the film in such a position as to be damaged. At least an operator should be able to test the threading

manually by means of a hand-power knob, before turning on the motor. If a stoppage occurs where the film remains motionless in the projector, while the pawls continue to move, the safety trip to prevent tearing is a good feature.

Rewinding has been mentioned above, but might be noted again: fast and simple rewinding helps in making repeat showings possible within the time-limit of a lesson period. Tilting the projector to bring the picture on the screen is usually accomplished by an adjustable leg under the front of the machine, and this mechanism should be self-locking to avoid slipping. Focussing should be quick and easy, with the resulting image sharp and clear. A coated lens permits the maximum light to pass, and give better picture definition. These features are found on most projectors to-day.

Many projectors are used without any attention to such points as cleaning and oiling, until a breakdown occurs. To make such matters simple and obvious should be a feature of any design. A diagram of the mechanism, with the locations of parts which need regular cleaning and oiling, is a good means of promoting proper care of the equipment. To the same end, readily accessible brushes for cleaning the frame, and tools for minor adjustments, should stand out in the selling arguments of well-planned projection equipment.

Films are expensive, and unless the life of a film is long enough to bring down the cost of each showing to a very small fraction of a cent per pupil, there will be justification for purchasing some other less expensive type of visual aid. Moreover, worn films lose much of their value because of stoppages, indistinctness, or distracting marks on the picture and sounds in the speaker. For these reasons, it is well to consider how the film will fare in the projector. The same maker who tried dropping the unit on a concrete floor had a film run through his machine five thousand times, and reported no harmful wear after the experiment. It may be difficult to estimate the amount of ordinary wear and tear that a film will undergo in any given make of projector, but the prospective buyer should enquire about this feature when the projectors are being demonstrated.

A worthwhile precaution when having a film projector demonstrated is to see the equipment set up from "scratch". If the demonstrator has trouble putting it in position, there is all the more reason to expect the less experienced operator to have difficulty. For instance, one may check to see that there are no alternative connections possible, either in the wiring (where individual receptacles would prevent wrong connections), or in the fitting of the arms holding the film reel and take-up reel. In all operations, the ideal should be to obtain such simplicity that a good, handy pupil could learn to act as an operator under the teacher's supervision. Boys like to do this, generally do the job well, and save valuable time for the teacher to use in preparing the class, making black-board notes, and overseeing class activity.

Finally, one should look for versatility. A few years ago, a projector which permitted the use of both sound and silent film was considered the last word. To-day, with the introduction of new ways of teaching public speaking, literary and musical appreciation, and the wider use of the school auditorium for home and school meetings and community activities, the sound film outfit must do other jobs as well.

Despite the displacement of silent films by sound, it is still desirable to have a silent speed on a projector. Many excellent amateur films are made on silent film. The power requirements of the projector and amplifier will have to be considered, since special outlets may be required. Models which permit the use of either AC or DC without adjustment may be obtained.

The school which plans to use a projector in a large assembly hall or gymnasium, as well as in classrooms, will take into consideration amplification, illumination, size of lens and film capacity. A larger speaker will give better results in a larger room, and probably the twelve inch size will be chosen in preference to the smaller eight inch one. As in the choice of a radio, acoustics enter into the picture: the size that is excellent for home use is often quite unsuitable for a school room. Optional use of 750 watt or 1,000 watt bulb should take care of the question of light. With regard to lens size, a valuable guide is: to fill a screen $5\frac{1}{2}$ feet by $7\frac{1}{2}$ feet at twenty feet distance requires a one-inch lens; to do the same at thirty feet takes a two-inch lens. As to film capacity, a two-thousand foot reel runs for an hour, and this size is accommodated by many projection units to-day.

Several makes offer a model in which the speaker is fitted integrally with the projector. This reduces the time taken in setting up the equipment in a classroom, but, in a hall, the sound comes more naturally from the neighbourhood of the screen. Hence a speaker which may be used at a distance from the projector is more versatile.

How many times does a teacher wish that the film did not run through so quickly! Now that projectors can be obtained which allow the film to be stopped for the showing of one frame at a time, without danger of burning the film, the motion picture has acquired one of the advantages of the film strip.

Some projectors carry the film reels mounted above the table level, instead of having one above, and one below. This feature obviates the necessity of setting the projector on the edge of a table.

An amplifier which can double for a public address system is a good investment. Some makes have the microphone outlet as an optional feature; some have it as standard. Classes in speech arts, including radio technique, would be able to make good use of this additional equipment, while school assemblies, entertainments, and dances would find that it simplified organization and added to the enjoyment of the audience.

Along with the microphone, the turntable is coming into school use as an aid in teaching music, speech, drama and literature. While it is true that a record player will serve the same purpose, the control of the sound film speaker is likely to be more sensitive, and it has the advantage of allowing the operator to adjust volume and tone by remote control from the back of the room. Then, too, the film amplifier will permit greater volume with clarity than is obtainable from the ordinary record player. This is another way in which the investment in a film projection unit can accomplish several desirable aims at the same time.

In order to round out this treatment of desirable features in motion picture equipment, some mention should be made of the other requirements of sound film projection. The room in which the films are screened must be sufficiently darkened, either by fitting light-proof blinds, as in a classroom, or by including

in the plan of a new school a special projection room, which, if properly ventilated, may be constructed without windows. To aid in getting the best picture definition possible, a beaded screen (sometimes called a "daylight screen") is helpful. It is good for clear, bright pictures, except at a wide angle. Flat screens would therefore be better in an assembly hall where children were seated close to the screen at one side or the other. Besides having the room dark, it must also be quiet to get best results from the sound; and though human bodies make rather good material to absorb unwanted echoes (as well as, on occasion, providing unwanted sounds themselves), they can easily be distracted by noisy mechanism in the projector. A quiet machine is an aid to concentration on what the film has to show and say.

The initial cost of a motion picture projector has never prevented enterprising principals from obtaining one when the size of the school could support it. In Canada it is possible to obtain a sound film outfit which will serve the purposes of many school programmes at a cost of slightly over six hundred dollars. As this article has tried to show, there are other considerations besides low initial cost but, with the increasing use of film in larger schools, there is a point where more than one unit will be needed if full use of well-stocked provincial and school board film libraries is to be made.

The effectiveness of the sound film as a teaching aid thus depends on two factors: the personality and showmanship of the teacher, and the equipment he has to work with. The good workman is worthy of good working tools. "If we professionalize the teaching equipment, we can professionalize the teacher."

New Additions to the Film Library

Arithmetic

- T-840 Meaning of Percentage, The
 T-842 Parts of Nine
 T-844 What is Four ?

Geography

- T-822 Impossible Map
 T-835 What is a Map ?
 T-836 Photo Canada
 T-845 Wind from the West
 T-858 African Tribes

General Science and Biology

- T-826 Joan Avoids a Cold
 T-832 Exploring with X-Rays
 T-841 What Makes Day and Night
 T-846 Immunization

Other Films

- T-819 Polish Dance
 T-820 Ukranian Dance
 T-821 Singing Pipes
 T-823 The Postman
 T-824 Two Thousand Years Ago...
 The Home
 T-825 Beginning Tumbling
 T-833 Heads Up (Red Cross)
 T-837 Johnny Minds His Manners
 T-838 Songs of Stephen Foster
 T-839 David Copperfield - The Boy
 T-843 Play Ball, Son
 T-847 Making Shoes
 T-859 Kidnapped
 5511 Dotty et Michel à Percé en
 Gaspésie
 5512 Dotty et Michel à Montréal
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MAKING A SOUND FILM**J. A. Fraser, Fraser Films, Montreal**

Where sound films are used today in schools, they have proven to be so valuable that they have been described as "the best teaching device since the invention of printing". Students viewing sound motion pictures are at the peak of responsive interest. Outside distractions are all eliminated. Words and ideas take shape and form—different abstractions are translated into easily understood realities.

The common conception of motion picture production is of temperamental Hollywood artists, extravagant sets, costumes, and all the paraphernalia deemed necessary to make a product the public will pay to see. When disrobed of these trappings, however, motion picture production is no more glamorous than any other business or manufacturing process. This is especially true of the production of teaching films.

A teaching film should be designed to do one job at a time, covering one phase of a subject. Motion pictures are generally not a complete teaching medium in themselves, but an aid to teaching. All good teaching films have this in common: they serve to stimulate interest and provoke discussion. They should be made to fit in with the regular school syllabus, and used to explain points, processes, or ideas, that cannot be readily grasped by reading or listening alone.

In all types of construction or production, certain logical preliminary steps are necessary to turn out a satisfactory product. A contractor, for example, must have a blueprint. Likewise, in motion picture production, detailed and painstaking planning is necessary if a worthwhile film is to be created. Planning groups should be kept as small as possible. After the specific type of film has been decided upon, the planning group should consider production from every possible angle before "shooting" begins.

The script consists of informative copy material together with information necessary in producing the film. Like the builder's blueprint, the script must be rigidly followed. After the script has been checked and re-checked, locations are studied, and if sets are necessary, these are constructed. Frequently it is more economical to film "on location" than to construct costly sets. If this is the case, prior to shooting, preliminary plans are made with the camera men to check for camera angles. If sets are necessary, these are constructed in the same manner as scenery for a stage presentation.

If the filming is to be done outside, good lighting conditions are essential. The natural lighting from time to time has to be supplemented by the use of artificial lighting. When shooting is done inside, proper artificial lighting is essential. For indoor shooting, heavy-duty lighting equipment is necessary, and the amount of light used on one set is comparable to that used by an average school when all the lights are in use. Where actors are required, rehearsal after rehearsal is necessary to become action-perfect even when the film is shot "silent".

If synchronized sound is necessary, it is imperative that the actors become not only action-perfect, but also line-perfect. Two general methods of shooting are employed, shooting "silent" with the sound recorded later, and shooting "sync sound" with the sound recorded at the time of the action. When pictures are shot "silent", the film is edited to obtain film continuity corresponding to the prepared script, and later the final edited film is narrated. This is what is termed "post recording". When the sound is recorded at the time of filming, the process is termed "sync sounding".

The script, or blueprint, outlines the various sequences to be photographed. These sequences, however, are not necessarily filmed in the order shown on the script. It is often more economical and expedient to shoot scenes in neighbouring locations, even though the actual scenes are not in script sequence. The various scenes which go to make up a film are edited later to be in the same order as the script. In the script each scene is assigned a number, and prior to filming, it is "slated". This term refers to the photographing of a small blackboard on which the scene number and shot number are noted. "Slating" is done to aid the editor in assembling the finished footage.

At the end of a day's shooting, the film is sent for processing. The processed footage is viewed to make sure that the scenes have been filmed according to the specifications laid down in the script. If any re-takes are necessary, they are done immediately. It is customary to leave production sets assembled until the director is finally satisfied that the photography and acting are correct.

In the production of educational films where detailed explanation is frequently necessary, animation and charts are often used. An animated series consists of a number of individual drawings, photographed frame by frame, with each frame differing from its predecessor by only a slight change in the drawing. When viewed at the regular projection speed, these drawings appear animated.

Possibly the most important phase of film production is editing. When all shooting has been done the animated sequences filmed, together with titles and charts, the whole production is ready to be edited into its final form. The various scenes are assembled in the same sequence as the script, and the scenes are edited so that they fit together smoothly. The film, in its edited form, is re-checked for continuity, and any last minute changes must be made before a final clearance is given regarding the correctness of the picture sequence. The film is now matched from a footage and time point of view to coincide with the final script, and is ready for voice recording, together with music and sound effects, if needed.

When desired, suitable musical background is selected for the film from specially prepared orchestral music, organ music, or licensed background music available on phonograph discs. If sound effects are required, arrangements are made for these effects to be recorded separately, ready for the final recording on the sound film.

If the film is "post recorded", the narrator first rehearses the script so that it will match the projected picture. Next a print of the edited film is projected

on the screen by a projection machine whose motor is synchronized with that of a film recording machine. Acting on "cues" given by the film director, the narrator reads the script and the voice is recorded on film in the film recording machine so that narration and picture go hand in hand. Thus the recorded sound footage is available to be combined with the picture footage into the final sound film print. If music and sound effects are to be included on the sound track, music and sound effects are recorded at appropriate times with the narration. This combining of sounds from various sources is often called "mixing", a term adopted from radio.

After the recorded sound footage is processed, it is matched to the picture footage, and the track and picture are printed together on one strip of film, giving the final sound print. After the track and picture have been printed together, and the first test or "answer print" is made, this print is screened and checked for picture and sound quality. The picture is then ready for showing. Prints for projector use are made from the original or master footage.

It is evident that motion picture production is a business that needs plenty of patience, careful planning, and much painstaking effort—but what worthwhile business or profession does not? With painstaking arduous effort modern technology has produced a powerful tool to assist teachers. It is up to every teacher to learn how to use this powerful teaching aid effectively.

School Calendar: 1948-1949, Revised

The school calendar for the school session of 1948-49 is as follows:

	Number of School Days
1948	
September, Tuesday 7th Schools open for session	18
October Holidays for teachers attending con- vention and for Thanksgiving	18
November Holiday: Remembrance Day	21
December, Wednesday 22nd Schools close for Christmas Vacation .	16
1949	
January, Monday 3rd Schools re-open following Christmas Vacation	21
February	20
March	23
April, Thursday 14th Schools close for Easter Vacation.	
April, Monday 25th Schools re-open following Easter Vaca- tion	15
May Holiday: May 24th	21
June, Friday 24th Schools close for session	18

FILMS AND FILMSTRIPS AS AIDS IN TEACHING GEOMETRY

W. J. Sargeant, B.A., Inspector of Schools, Montreal

It is a common complaint of teachers that many pupils, even after studying Geometry for one or two years, seem to have a complete lack of understanding of the subject. To combat this situation, which has existed for years, it seems advisable first to analyze the common difficulties experienced by students in Geometry and then to consider what the relatively new teaching aids, films and filmstrips, can do to help clear up the difficulties.

In Geometry there are three general classes of difficulty: (1) Those due to unfamiliarity with geometric figures; (2) Those due to not sensing the meaning of the "if-then" relationship; and (3) Those due to a non-understanding of the meaning of proof.

(1) *Difficulties due to unfamiliarity with geometric figures.* Many writers of text books define a term, perform a construction, or prove a proposition with the use of as simple a diagram as possible and then expect the pupil to apply what he has learned in the solving of other exercises. Some students do not make generalizations readily, and others do not make them at all, because their learning of geometry has been largely a process of memorization. Efficient teachers realize that a pupil who can perform a construction in a particular situation may not have the ability to make the same construction in a different situation. Many pupils become confused by additional lines or the shifting of the position of figure. These pupils do not dissociate the essential and particular parts from the parts of the figure which they should disregard.

(2) *Difficulties due to not sensing the "if-then" relationship.* The "if-then" relationship is fundamental to the thinking which the high school pupil usually meets in a formal manner for the first time when he begins the study of Geometry. All propositions might be thought of and discussed in the "if-then" form, and good teachers are aware of the frequent failure of their pupils to grasp the relationship of these two words. It is at this point that many pupils begin to memorize Geometry without understanding. What is meant by the logical implications of a proposition stated in the "if-then" form is made clear by the following example:

"What is the difference in meaning, if any, between the first two of the following statements:

(a) If two sides of a triangle are equal, the angles opposite those sides are equal.

(b) If two angles of a triangle are equal, the sides opposite those angles are equal.

Does either one of these statements mean the same thing as the next statement? If so, which one?

(c) In an isosceles triangle, two sides and two angles are equal."

The realization of the difference in meaning involves an understanding of the "if-then" relationship. Unfortunately its meaning may not become clear to pupils in time to begin making proofs with understanding, thus making the learning of Geometry confusing and meaningless.

(3) *Difficulties due to not understanding the meaning of proof.* The proof of a proposition in Geometry is deductive. Only what is implied by the data may be assumed concerning a figure. The reasoning proceeds by means of syllogistic thinking from the data to the final statement and each intermediate conclusion becomes the basis for further deductions until the final conclusion is reached. No statement may be used as a reason unless it has previously been agreed upon. No deductions can be made correctly unless the conditions given have been completely fulfilled.

All this must be assimilated consciously or subconsciously by a pupil before he can make a proof in geometry correctly, whether he writes the proof formally or thinks it out informally. At the beginning of the study of Geometry, many pupils have little conception of what it means to draw a conclusion from a general statement. They will draw a conclusion when the conditions are not fulfilled and will draw conclusions which are irrelevant. They do not realize that they are restricted as to the data and reasons which they may use, and are prone to make inferences from the appearance of a figure, or to use a reason which they have manufactured.

Educating with Movies: It is well known that during the past war there was an urgent and critical need to educate hundreds of thousands of Canadian youth who were untrained for the job at hand. This education had to include a knowledge of several high school subjects such as arithmetic, geometry, algebra, and physics before the complexities of airmanship, navigation, aero-dynamics and artillery range finding could be understood and applied. To assist in giving this necessary instruction, a great deal of experimentation was done in the development and use of films as supplementary aids in teaching techniques. Tests and results showed that trainees learned much faster, and with better understanding and appreciation when films were included in the teaching methods. Particularly, they showed that when an instructor gave an introductory lesson before showing the film that the percentage of new material learned was almost double the percentage learned by verbal teaching alone and by film showing alone. Consequently the use of films became practically a "must" in military training.

To dismiss educational applications of military and industrial teaching techniques by pointing out that the personnel was composed of adults while the population of our schools is made up of male and female adolescents is to overlook the fact that the former trained many of the same men and women whom the schools had not educated above the elementary grade level. Even though the school and the military and industrial training programmes do not have identical objectives, they have much in common and it would seem safe to conclude that the wider use of films as instructional aids in the schools will bring similar and better results.

Many schools have the facilities for teachers to use films as supplementary aids, and in such schools the showing of educational films is now a weekly occurrence. More effective use of these facilities would result, however, if the teacher introduced the lesson verbally before showing the film on the lesson and used another period after the film to pull the loose ends together. The weekly showing of educational movies with little or no introduction and review will never produce the results which could be obtained if films were shown as part of a planned lesson.

The use of films in teaching Geometry, or any other subject, can never replace the services of the teacher. Actually the teacher's services and advice will be required more than formerly by the added interest, appreciation and understanding of the subject which films create and maintain. With this kind of supplementary visual teaching aid, more preparation, more rehearsing, more thought, more selection of just the right kind of delivery goes into the ten, twenty or thirty minutes of instructional time occupied by the film that in almost any other comparable period of teaching. The film is worth the time, however, for it puts at the teacher's disposal a finished presentation which is the result not of a few minutes or a few hours of pre-lesson preparation but of weeks and months of preparation by a highly qualified subject matter specialist.

Assisting Pupils to Overcome their difficulties in Geometry by using Movies.

(1) *Inability to read geometric figures:* It was stated that one of the basic difficulties in the learning of geometry is the inability of many pupils to transfer to a complex figure the skills which they have acquired in connection with a simple figure. Slight changes in a figure seem to affect their responses adversely and their ability in connection with a simple figure does not insure ability in connection with a complex figure, even though the complication is slight. To apply a theorem to a complex figure, the pupil must be able to see in the figure the particular configuration which comprises the essential relationships of the theorem. The natural tendency to see a figure as a whole conspires against this analysis. Teachers of geometry are therefore faced with the problem of devising methods which will help pupils to see the essential parts of a figure and to analyze them so that they will see them in a more complex figure, dissociating the relevant from the irrelevant. Films and filmstrips provide an excellent means of helping pupils in this respect by showing many differently shaped figures alongside each other and comparing them with a rapidity and coordination which a teacher cannot equal with the use of a blackboard or flash cards.

Whenever a term is defined, it should be illustrated in complex figures as well as in a simple one. When a proposition is proved, or otherwise accepted, pupils should have practice in applying it in complex figures. The efficient teacher constantly seeks methods that will focus the attention of the pupils upon the particular parts of a figure which it is necessary for them to see. Colored chalk or crayons may be used to make the application stand out. Particular parts of the figure may be drawn separately at the side of the complex figure. The entire figure can be done on the blackboard and then the non-essential parts erased in order to show the essential parts. To give pupils sufficient practice as suggested, a teacher is handicapped by blackboard space to say nothing about a lack of the time required to draw figures accurately and neatly. Films and filmstrips enable the teacher to use all the suggestions referred to above almost concurrently, and at the same time focus the attention of all the pupils on the exercise at hand.

The subject of loci needs careful approach and the efficient geometry teacher knows that a considerable amount of plotting of loci from given conditions should be given before formal theorems are approached. The idea of locus presents difficulties to the average and even to the above average pupil and the successful teacher realizes that it cannot be forced. While it is probably true that the

subject is best approached at first through the idea of a moving point, no practical use can be made of it until a locus is recognized as the aggregate of all points fulfilling the given conditions, excluding all other points. Here films are of assistance in permitting many examples to be shown in a short time and by making locus seem more practical through showing its application to everyday life.

(2) *Non Understanding of "If-then"*. To develop the meaning of the "if-then" relationship, movie films can supplement teachers' methods of introducing into the geometric situation those casual elements which are often lacking. If a pupil constructs a figure under certain conditions he finds that other relationships result. Although both sets of relationships are true of the completed figure they separate themselves into two categories. The pupil does have control of one set, the "if" set, as he made them so; but he has no control over the other, the "then" set. They came about as a result of what he did. The given conditions were put into the figure first; the other relationships came as an inevitable consequence, afterward. Once a pupil sees that the relationships in a figure can be put into either of these categories the concept may be associated with the "if-then" statement. When the difference between the two categories is seen clearly, the meaning of the "if-then" relationship should take on a concrete meaning.

Example: Draw line AB, 6 inches long
 Complete triangle ABC with any dimensions
 Bisect AC at point D
 Bisect BC at point E
 Join D and E. Measure DE

All other cases done similarly give the same result. The use of films can supplement the teachers' lesson by showing many examples quickly and accurately in a much shorter time than would be required for the teacher to impress on the pupils by drawing many diagrams that *if* a certain thing is done, *then* a certain other thing always results. By using movies to show several different examples of "if-then" as suggested above, geometry would be being taught with as dynamic effectiveness as chemical reactions performed before a class make the study of Chemistry dynamically effective.

(3) *The Meaning of Proof*. It was intimated that many pupils have little conception of what it means to draw a conclusion from a general statement. They write conclusions when the conditions are not fulfilled. They omit conclusions when the conditions are fulfilled. Sometimes they make conclusions which are absolutely foreign to anything in the given statements. In drawing conclusions some will assume relationships from appearances instead of holding to the given data of the geometric figure. These and other errors noted in proofs given by some pupils show clearly that they do not know what is actually meant by proof.

Pupils need to learn that a conclusion can be drawn only when all the conditions are fulfilled. They must learn to analyze a statement to find out what the conditions are that must be fulfilled and they must be able to see whether all the conditions have been fulfilled. They must learn that when the conditions are fulfilled the only conclusion that can be drawn is the one stated in the first premise.

Some pupils do not grasp readily and easily the concept of holding to data. Without careful training they will give more weight to the appearance of a

geometric figure than to the hypothesis. This may be a result of their everyday experiences in living where they think by intuition concerning things in general and make deductions using any part of the total situation that appeals to them. In Geometry, students must learn that their reasoning must be definitely restricted to the data, the definitions, and the propositions proved previously.

Films and filmstrips can assist greatly in teaching pupils the meaning of proof. The films listed at the conclusion of this article bring in action where it is desirable. The commentary deals with propositions naturally and without going over the heads of the listeners. The teaching is oriented in terms of the learner and focuses his attention. Nothing can demonstrate the idea of locus so vividly as a film in which the point moves. In teaching proofs the uses of colour are infinite, and it is difficult to use them adequately on the blackboard. Geometry textbooks rarely use colour but many of the films and filmstrips explain proofs with an easy and rapid application of coloured sections in diagrams.

Until recently, suitable films and filmstrips have not been available as supplementary aids for teaching Geometry, but within the past year a series of these on selected propositions has been produced and has been added to the Film Library of the Department of Education. Teachers will find them effective in minimizing the difficulties experienced by pupils in their study of the subject. Even if a regular schedule of planned instruction with the use of films cannot be maintained due to inadequate local facilities, all teachers of geometry should see these films, as they will provide many valuable hints on methods of introducing, presenting and concluding lessons on certain propositions.

Technique of Teaching with Films and Filmstrips.

The method of teaching by using films and filmstrips is similar to that of the planned technique of the educator who has been teaching geometry successfully after years of experience, and is divided into three stages; preparation, presentation, and follow-up.

(a) *The Preparation* — In preparing to supplement his teaching with films the teacher should:

- (i) Become familiar with the content of the film.
- (ii) Decide for what purpose the aid is to be used—introducing the proposition, direct teaching, reviewing or appreciation.
- (iii) Decide what the pupils should particularly look for during the showing of a film.

(b) *The Presentation*—This should be motivated by such means as:

- (i) Taking advantage of student interest.
- (ii) Advance assignments based upon the content of the film.

The pupils should know what they are to look for during the showing of a film. The lesson to be learned should be taught beforehand on the blackboard in a sequence similar to the order of points brought out in the film.

(c) *The Follow-Up*—A review of the proposition should be conducted as soon as possible after the showing of the film. Points not fully understood by some pupils should be reviewed on the blackboard until thoroughly understood.

Pupils who have more than the usual difficulty in understanding a proposition should be allowed to see the film a second time and even a third time if necessary. In showing a film a second time, the teacher may find it helpful to turn off the sound and make his own comments.

The technique of using films and filmstrips must follow these three stages, otherwise the teaching will develop into a passive observation with little gained by the pupils. During the first few lessons it may appear that progress for the year is being retarded, but with planned lessons with films, the increased understanding of the subject will decrease the amount of time required for pupils to work out exercises. This will compensate and allow ample time to complete the grade assignment for the year. With better understanding being obtained by those non-abstract thinking pupils we should hear fewer times the remark often made by pupils that they do not know what geometry is all about.

Film Now in the Film Library:

- T-770 Angles and Arcs in Circles
- T-771 Areas
- T-772 Chords and tangents of Circles
- T-716 Quadrilaterals
- T-740 Geometry in Action

Films available January 1, 1949:

- T-848 Locus
- T-849 Introducing the Circle
- T-850 Lines and Angles
- T-851 Angles
- T-852 Congruent Figures
- T-853 Similar Triangles.

Filmstrips (In Colour):

- | | |
|--|---|
| GE- 1 Introduction to Geometry | GE- 9 Postulates: Lines |
| GE- 2 Vocabulary: Lines and Angles I | GE-10 Postulates: Triangles and Circles |
| GE- 3 Vocabulary: Lines and Angles II | GE-11 Locus |
| GE- 4 Vocabulary: Lines and Relationship | GE-12 Geometry in Art |
| GE- 5 Vocabulary: Triangles | GE-13 Logic: Definitions |
| GE- 6 Vocabulary: Polygons | GE-14 Logic: Deductive Reasoning |
| GE- 7 Vocabulary: Circles I | GE-15 Logic: Introduction |
| GE- 8 Vocabulary: Circles II | |

Radio in Canada

The story of radio broadcasting in Canada is one of a unique system designed to overcome the problems posed by vast distances, five of the world's twelve time zones, a scattered population of only twelve and one-half millions, and two languages. In Canada, network announcers can be heard saying "This is the Canadian Broadcasting Corporation," or "Ici Radio-Canada"; for broadcasting is carried on every day in English and French, mainly on separate networks.

From time to time, in most democratic countries, radio broadcasting becomes a controversial issue. In Great Britain, the BBC operates under a Royal Charter which comes up for renewal every five years, and which usually sets off lengthy debates on broadcasting operations. In the United States, the Federal Communications Commission has given radio companies strongly-worded reminders that they have responsibilities to the public as well as to the advertising sponsor, and there has been talk of greater government supervision of broadcasting. Radio broadcasting in Canada is studied from time to time by parliamentary committees, which make a careful examination of policies and operations.

Of the three systems mentioned above, Canada's is unique for it is a combination of public ownership and private enterprise. Privately-owned radio stations across the country provide local community service. The Canadian Broadcasting Corporation, or the CBC, as it is known, provides national service by means of networks made up of its own, and privately-owned stations.

A PROGRAMME FOR IMPROVING AUDIO-VISUAL INSTRUCTION

Walter W. Bennett, M.Ed., Charlotte High School, Rochester, N.Y.

Facing our Common Instructional Problems: Compulsory education in both Canada and the United States brought more pupils and new problems to our schools. Schools in both countries have been confronted with increasing numbers of pupils for whom the traditional methods of instruction are inadequate. Coincidentally with these new pupil populations in each country, audio-visual materials and devices were introduced into our classrooms.

Since their introduction, teaching methods using community resources, field trips, demonstrations, radio and recordings, flat or projected pictures, and silent or sound moving pictures have been all too casually employed by teachers. Moreover, misuse of audio-visual materials has produced in the minds of many teachers misconceptions of the real value and function of these aids in education.

Today's increased pupil populations have more varied backgrounds and greater differences in learning capacities than their predecessors. All the children of all the people are a less selective group, with a smaller proportion of traditional scholars than in former years. Many are unable to profit from traditional, academic and highly verbalistic instruction. Unfortunately, our schools on both sides of the border, faced with these different pupil-learning needs, have too long clung to the traditional methods of teaching. We persist in putting all of today's pupils through the same educational mill—depending almost exclusively upon the printed or spoken word as the medium of instruction. Too many teachers confuse talking with teaching and reading with learning.

The results are familiar. This more heterogeneous mass of today's pupils, unable to learn from verbalistic teaching, yields more failures, judged by the traditional standards. Maturity promotions, lowered grade standards and early drop-outs from secondary schools all testify to our ineffective methods.

Revisions in curricula and in methods by which experiential learning replaces part of verbalistic teaching are increasing. These revised procedures integrate audio-visual methods with curriculum content, and while not as glibly acquired by teachers as is "the new look", when once mastered as techniques, they greatly reduce the learning difficulties. It is well said that a picture is worth ten thousand words.

Experiences Build Concepts: Direct sensory experiences for pupils through field trips, personal contact with reality or directed observation of exhibits, pictures, models or movies are essential to the development of concepts. Such experiences build meaning into words. Rich meanings, developed out of rich experiences, are essential to good reading. Our pupils must also learn to read materials other than books. They must read maps and globes, pictures, symbols and even movies if they are to become intelligent citizens. Printed materials and audio-visual materials are, however, complementary and by no means com-

petitive. We misuse audio-visual materials and waste their powers when we neglect to provide experiences with books, pamphlets, and newspapers as complementary learning media.

The evolution of audio-visual instruction in the United States followed a different pattern from that in Canada. Into individual schools in the States audio-visual materials were introduced by pioneering efforts of single school staffs. Starting thus, almost 20 years ago, this development grew as from the grass-roots upward. Individual schools formed cooperative units. City systems and county units linked up with state departments or state universities for visual education. Only recently has this growth blossomed out at the top with national organizations for the improved utilization of audio-visual aids.

Canadian progress in this educational development seems to have proceeded in a somewhat opposite direction. Beginning at the national level about a decade ago with the formation of the National Film Society and the National Film Board, the audio-visual movement progressed downwards through provincial departments, county and city administrations and ultimately fanned out into the individual schools. This downward growth may have engendered passive attitudes in teaching staffs.

Where the movement originated almost spontaneously at the bottom, there were ambitious teachers who pioneered, staff-members who participated in experiments with visual aids. As the movement spread upwards in education it was borne by the same originally interested and actively participating teachers. While growth was thus spasmodic, and oft-times enthusiasm exceeded efficiency, the benefits of this maturation are evident today. There now exists in American education a considerable body of enthusiastic, active personnel who by their own experience are able promoters and inciters to improvement in teaching among their less energetic colleagues. Here is a veritable network of leadership to sponsor continuous endeavour.

Canadian schools seem to lack this fabric of promotional personnel. Perhaps this lack and present need is in part due to the downward growth and spread of the audio-visual movement. Certainly among industrial workers, whenever an innovation is suspected of being superimposed, its adoption is less enthusiastic than it is under a participatory evangelism for the new idea. But many obvious means exist in Canadian Education for the enlistment of interested energetic teachers as a core of enthusiasts and specialists for the improvement of instruction.

Engaging Staff Participation: The successful user of sensory learning tools must be in the first place a good teacher. Good teachers are most likely to respond to an opportunity to participate in the organization of a school's audio-visual programme. Participation in a launching is more appealing to the ambitious than passive adoption of a mode, and thus attracts an enthusiastic task force. A task force is truly functional in this instance because effective utilization of sensory learning materials requires more rather than less effort exerted in instruction.

The principal is not only the administrative head of his school, he is the key to its instructional programme. In the interests of progress he must feel a need for improvement of instruction within his school and be able to inspire and encourage his staff to use all available instructional materials to best advantage.

School Committee on Instructional Materials: Within an individual school a staff Committee on Instructional Materials should be comprehensive. The size of such a committee is partly determined by the size of the school but too large a group is ineffective. There should be representatives of the various grades or departments, and a specially selected teacher, sometimes called the Coordinator of Instructional Materials, should serve as Chairman or secretary of the committee. The principal should be considered an ex-officio member.

The first function of a committee initiating an audio-visual programme is to survey the materials and equipment on hand. It is not uncommon for a school's projector to become a skeleton in the closet about which but few persons know. From the findings of this survey the committee can formulate policies and procedures like the following to expedite the programme:

1. Where should equipment and materials be placed for most convenient use by every teacher?
2. To what extent shall the school purchase or rent materials for use within the school and to what extent shall it rely solely on city, county, or provincial resources?
3. What kind and how much equipment should be purchased by or for the school?
4. Should projection or audio equipment be moved from room to room, used in a central room, or both?
5. Should such equipment be pupil-operated, teacher-operated, or both?

The Coordinator of Instructional Materials: Where a teacher is to be specially appointed to act as Coordinator of Instructional Materials, enthusiasm and ability are the first qualifications to look for. Enthusiasm is needed to carry on the extra work attached to this position. In order to accomplish the work effectively, the coordinator in even a small school should be relieved of classroom duties for a certain portion of the day. He had best be a staff member who has sought out the job. This is too important an assignment to be placed as an extra burden upon a person who does not want it.

Ability must be early demonstrated by the aspirant. He should have a broad concept of instructional methods, an optimistic, professional outlook for the growth of the entire school, a sound knowledge of the school curriculum and an ample familiarity with audio-visual materials and equipment. His personality must invite other teachers to call on him for assistance with classroom work. A teacher whose interests are confined to the narrow and technical mechanics of the equipment is unsuitable. The good coordinator can fulfill the all-important job of getting the right material to the right teacher at the right

time. "He" can be, and in many cases will be, a "she". It is possible that in Quebec a school's coordinator may be found among recent summer students at the School for Teachers, where interest and facility in audio-visual techniques has increased in the last two years as a result of special courses in audio-visual aids.

The qualified person assumes many specific duties. He serves as procurement, schedule and distribution agent. He provides for storage of materials and for mechanical maintenance. He trains operators and may organize older pupils in a club for the purpose. He provides facilities by which teachers may preview materials or obtain synopses or teaching guides for preparing to use films, slides and the like, and finally he becomes liaison agent for his school with distributors.

The Teacher as The Focal Point of the Programme: The classroom teacher is the master of ceremonies amidst all this endeavour for a better educational programme. If the teacher fails to play her part the entire programme collapses. She should, with all this support, yet strive (1) to know where to secure information on available materials (2) to know how to secure these materials, (3) to know how to use them and (4) to use them.

Two small categories of teachers exist in our schools today. First, and most dangerous, is the group that gives pupils mental indigestion from over-dosage of audio-visual materials. The second group is the opposite extreme,—teachers who don't "have time" to use audio-visual materials. Both kinds of teachers fail to recognize that sensory-learning materials are instructional instruments—that they are powerful tools when properly used to help her do better teaching and to accomplish, as the army did, more learning in less time. The great bulk of our teachers fortunately fall between these extremes and need only assistance and encouragement to become effective users of these aids.

To use these materials effectively the teacher must:

1. Plan the work, and induce pupil participation in the plan.
2. Make ready the materials and foresee their potentialities.
3. Know the precise moment and proper place to use them.
4. Capitalize on the interest they arouse to motivate further complementary learning activities.

Professional Sponsoring Groups: From above the school-unit level in Quebec, participation in promoting effective utilization of sensory-learning methods can be fostered by teacher committees. Local associations, by devoting one or two meetings to the subject, can bring about a valuable pooling of information on the use of visual aids.

Provincial and national organizations of the teaching profession, like the Quebec Provincial Association of Protestant Teachers and The Canadian Education Association, offer further avenues for reinforcing the movement toward improved techniques. At this level of operation a valuable resource of visual materials lies in wait. Just as in the United States today, Canadian manufac-

turers, utilities, and commercial interests are now ready to produce educational films that can be used in the classroom. Furthermore, these interests today seek cooperative planning with representative educators for their sponsored films. Audio materials in the form of local-area radio lesson broadcasts and transcriptions of selected network education programmes await professional attack.

These professional groups should activate continuous teacher training in the use of sensory learning devices. At annual teacher conventions and oftener during the year, exhibits of equipment, short-term institutes and special classroom demonstrations could be provided both at provincial centers and local regional centers.

Audio-visual materials should be selected by those who use them. Selection should be based upon realized pupil-learning needs. Teacher committee work will serve these principles when educational film libraries purchase new accessions based upon preview reports from evaluating committees who meet for this express purpose. In the United States, such groups of teachers serve as clearing houses for procurement problems in the schools, and have been known, on occasion, to recommend to the library the purchase of additional copies of present accessions before the acquisition of additional new titles in single prints. An indirect benefit from such organizations is the constant familiarization of a nucleus of users with new aids and devices.

Through enlistment of teacher participation in the schools up through the Provincial Department, a network of task forces is created. The movement for improved utilization of audio-visual instruction assumes a broad base and an environment of common endeavour. With all these participants bent toward getting effective instructional materials into the hands of the teacher, much human inertia toward an innovation is overcome.

Look Aloft

There will be a good chance for our boys and girls, within fifty or sixty miles of Montreal, to see a flying machine during the week from June 28 to July 4 inclusive. If the present plans mature there will be a large gathering of such wonderful structures as aeroplanes and flying machines on the broad fields of the north shore of the St. Lawrence near the village of Pointe Claire, about 14 miles from Montreal. There are likely to be prizes for the *highest flight*, the *greatest speed* and the *longest journey* without alighting. This last test will send a lot of machines out a long way from the meeting grounds at Laprairie, and the boys and girls who keep good watch aloft will very likely see something good for curious little eyes to behold. These machines will be visible in daylight, clouds or no clouds, and, to most of those who may chance to see them, will be more wonderful and instructive than a view of the comet's tail.

The sight of one of these ships would make a good subject for a composition when school opens in September.

Educational Record, June-July, 1910.

SPONSORED FILM PRODUCTION — AN AID TO LIMITED SCHOOL BUDGETS

**S. Alexander MacKay, Educational Consultant, Associated Screen News,
Montreal**

Before the production of any article is undertaken, the market for it must be such that the costs of the production, plus a reasonable profit, can be realized from its sale. In the case of educational motion pictures, the market in Canada is limited. Provincial Departments of Education and a very few school boards have budgets which include the purchase of instructional films. If, therefore, the cost of producing a film is in the neighborhood of ten thousand dollars, and the market consists of a little better than nine provincial departments of education, it does not require a knowledge of economics to realize the impossibility of even a return of costs unless the prints sell for more than \$1,000 each. This, of course, is ridiculous.

American companies enjoy a good market, and are, therefore, able to produce educational films which sell in Canada for approximately fifty dollars a print. But even at fifty dollars a print there are few school budgets in Canada which could include the purchase of many films. How then can our school children receive the benefits of instructional films if the high cost is to be the barrier?

A solution to this problem was offered by Canadian business and industry by the production of sponsored educational films. Such a plan, however, required the co-operation of the educationists. Unfortunately, a number of men and women in the educational field were of the opinion that the schools were ivory towers, and that the training of the children under their care was a jealously guarded monopoly. They forgot, or chose to ignore the fact that the great majority of children would some day be employed in the industrial or business world. It was not to them understandable that business and industry should have an interest in the education and training of their future employees.

Whenever industry offered something for use in the schools, a number of people in the educational field objected on the grounds that this represented selfish advertising and profit motives. Why they felt that the schools represented such buying power that industries wanted to devote their advertising budgets to them is a bit of a mystery. Perhaps a manufacturer of cent candy might realize immediate returns on efforts in this direction. The "selfish" concern of business and industry in offering materials useful to education is primarily one of good public relations.

Those in education who sniffed suspiciously at any donated teaching aid which carried a company name, even though this was in tiny print, immediately cried havoc at the mention of sponsored films. This to them was the thickest part of the thin edge of the wedge. This was the entrance of blatant advertising into the schools. It did not seem to occur to these people that in every waking hour in which the children are outside the schools they are surrounded by advertising. Billboards, neon signs, sky-writing aeroplanes, and that most obnoxious form of all, the dinning radio commercials, are part of their every day

life. These educationists were apparently unaware that a good teacher can add immeasurably to a child's preparation for life by teaching him to discriminate between good and bad advertising.

Fortunately, there were also in the educational field a majority of men and women with a more progressive attitude who did not hold to the views of these others. They felt that if industry could offer to education materials which would further the knowledge of the children and be teaching instruments in the hands of the teachers, such materials would be welcome. They stipulated, however, that a film must be entirely instructional, and that in return for this teaching aid the sponsor would receive full credit titles for the production. His name could also be mentioned where it was incidental to the story, and as long as the presentation was in good taste.

Those industries willing to work hand in glove with education discussed procedure with the educational authorities. The plan included the selection of subjects suitable to the educationists. The writing of the scripts was to be done under the supervision and with the full co-operation of active teachers and industrial advisers.

The beginning was made in a comparatively small way. Before national or even provincial interests were considered the experiment began with a subject having local interest only. The Board of Education of a large city was asked if a filmstrip would be of value which portrayed the development of the city in relation to the growth of its local transportation facilities. All the school principals in the metropolitan area and its environs were canvassed by the Board. Their enthusiastic reponse assured the sponsor of the acceptance of the proposed subject.

The script was written under the supervision of the sponsor and educationists, and the final results satisfied both. The filmstrip, incorporating old and modern photographs, diagrams and drawings, traced the growth of the city and the development of its transportation routes. The value of the filmstrip to the schools lay in its use in the teaching of local history. It was designed to stand on its own feet and to tell the complete story. It incorporated title frames as well as titled pictures. The pictures enabled the pupils to study periodic changes in fashions, architecture, and the methods of transportation.

Because the subject required some seventy frames the strip was divided into three sections, the past, the immediate past and present, and the future. Thus a teacher could divide the strip into three separate lessons. Each section began with a title frame listing a number of questions which served as a guide to the teacher, and enabled the students to concentrate their attention upon reading the information from the pictures.

The motive of the sponsor was that of better public relations, and a desire on his part to develop in school children an appreciation of the role which local transportation plays in the life of a city. The strip was given to those schools which requested it through their principals. To date, more than one hundred and fifty copies have been placed in that number of schools, and the results have been most encouraging.

The strip has served well as an instructional tool. It has increased discussion on local history. It has served as the basis for the preparation of compositions and projects. There has been an increased interest in field trips to places mentioned in the strip. Last, but not the least in importance, it has done a very good job of public relations. There has been a very noticeable respect for rules and regulations governing the operation of street railways. The filmstrip has demonstrated its value in proving that knowledge increases a respect for property and authority, and this is the basic element of good citizenship. Everyone, whether he be in education, business or industry, profits when children learn to be good citizens.

The next step in sponsored educational film programme was at first intended to be provincial. Happily, however, it received national acceptance. It was proposed that an instructional motion picture be produced which could be used in the schools of one of the provinces teaching Home Economics. The chief guarantee of the acceptance and use of this proposed film was the moral and active support of the Visual Education and the Home Economics sections of the Department of Education. Besides officials from the Department the help of a group of teachers who formed the Audio-Visual Aids Committee of the province was enlisted. The sponsor agreed to back the film, and to give one copy of it to the co-operating Department of Education.

The script was written and rewritten, read and reread by the educationists until it was felt that a picture would result which would be worth the time and labour involved in its production. A Home Economics teacher acted as the technical adviser. Another Home Economics teacher took the principal part, and nine of the girls from her school portrayed the students. With the exception of the dialogue scenes which were done in the studio, the entire picture was shot in the Home Economics classroom of one of the schools. Neither the teacher nor the students had ever acted in front of a camera before, and yet with one quick rehearsal before each scene the classroom sequences were completed within two days.

The film was designed to teach the baking of quick breads. Primarily intended for high school girls, its motivating influence was strong enough to encourage elementary school boys to do some baking at home. A principal investigated the boys' reaction, and reported that four mothers had confirmed the fact that their sons had made tea biscuits after seeing the film. By explanation, demonstration and repetition the film enabled a class of forty deaf and dumb girls to bake biscuits perfectly after one showing.

Prints of this subject have been placed in the film libraries of every Department of Education in Canada. In the Film Library of the Department of Education this film is listed as T-780, Baking Tea Biscuits. The one experimental print, considered adequate, in the beginning, has grown to more than twenty-five. In this way have the educationists accepted a teaching aid which is a credit both to them and to the company which sponsored it.

A sponsor in England recently produced a beautiful two-reel, black and white motion picture on the story of tea. Its educational features were so highly

praised in England that the sponsor's representatives in Canada decided to offer it for use in Canadian schools. A preview of the film was arranged for the Audio-Visual Aids Committee previously referred to. The members as practising teachers immediately recognized the great teaching value of this production. Its value in teaching geography and history could not be denied. Changes were needed, however, to adapt the film for Canadian audiences. A completely new sound track was made with a Canadian commentator doing the narration, although the original musical score was retained and some Canadian scenes were photographed and incorporated in the revised version.

The response to this production has been such that prints are now distributed by all the provincial departments of education, and by a number of Universities which have distributing libraries for Adult Education. The Film Library of the Department of Education lists this film as T-789, *Story in a Teacup*. A French version of this subject has also been completed.

For the past few years Vocational Guidance teachers have had to rely on American sources for visual aid materials. Filmstrips and motion pictures on career planning have been obtainable from the United States but the information, though of some use, was presented in a manner which caused students and teachers to feel that it might not be applicable to Canada. The only satisfactory solution to this problem is filmstrips on Canadian careers.

Considering that the people most qualified to know about a vocation are those engaged in it, educationists have welcomed the interest of the commercial world in the teaching of Vocational Guidance. A series of Vocational Guidance filmstrips accompanied by Teacher's Manuals has been planned. This, again, is the result of a clasping of hands between education and industry.

The writing is done by a teaching Director of Guidance. He prepares each script with the full assistance of the sponsoring organization. Together they prepare a story treatment which attempts to answer pupils' questions about the vocation presented. If the filmstrip awakens an interest which the manual does not answer, the pupils are encouraged to seek more information from the organization itself.

There has been inevitably some criticism of this plan. It has been said that business and industry will attempt to glamorize its advantages. On the contrary, neither business nor industry desires to give pupils a false impression, for it is the young people with a false impression who never stick to a job, and cause an annual loss of millions of dollars in wasted time and training. Sponsors want to tell their story to young people who might some day prove to be their steady employees. They want the young persons to know what the company expects of them, and what they can expect from the Company.

This type of guidance gives greater meaning to subjects taught in school. Young people who know what subjects are required in the type of career they wish to follow are more likely to be good students, for they have a serious purpose in studying. Some organizations stress mathematics as a requisite to suc-

cess, some ability in English and composition and others training in the sciences. All stress the need for good character references. They went employees who, during their school days, received A's for punctuality and deportment.

These Vocational Guidance filmstrips sponsored by Canadian organizations are being released to the schools, and it will not in future be necessary for teachers and pupils to ask why they must use American subjects. Happily, no school will be too poor to use these filmstrips for they will be given free, or at a nominal price, whichever plan the educationists feel to be the best for the schools concerned. Copies of the filmstrip "Careers in Canadian Banking" are being given by the Canadian Bankers' Association to all schools in Quebec which have a filmstrip projector.

In this way then are Canadian industries contributing to education. It is true that they expect some return for this "casting of bread upon the waters", and most educationists believe they will benefit in proportion to their giving. By sponsoring Vocational Guidance subjects industry hopes to aid the teacher and the students, and in return to receive a better employee. As one good turn deserves another, the school will receive the credit for its graduates who become successful in business.

It is most encouraging that there is great progress in the sponsored educational-film field. Of course, there is still some opposition but this comes mainly from traditionalists and agencies who feel that they will lose the sale of films if free prints are available. This fear is unfounded for there are still many subjects taught in the Canadian curricula which no industry would desire to sponsor.

Instructional films, sponsored by commerce which has the money to produce them, and guided by educators who keep the teaching factors predominant, are the healthy children of a happy union. The fearsome advertising spectre has turned out to be just another ghost. So long as complete co-operation exists, and as long as business and industry follow the advice of the educationists, Canadian school children will continue to benefit by seeing more of the best type of sponsored educational films.

Canada-United States Committee on Education

Much attention was given to a study recently released by the Canada-United States Committee on Education relating to the school history textbooks of the two countries. This study revealed that Canadian history was usually neglected in the textbooks of the United States, and that minor differences between the two countries were frequently overemphasized in Canadian textbooks. The authors of the study urged a more balanced treatment in American textbooks of all periods of Canadian history, with greater emphasis on the common ideals and movements of the two nations.

THE USE OF FILMS IN THE TEACHING OF FRACTIONS

Mrs. Edna Cooper, La Tuque High School, La Tuque

Teachers everywhere are interested in improving the teaching of fractions because they recognize how essential the knowledge of fractions is in every day living. If a child gets a right start in fractions in the middle Elementary grades, he will find the arithmetic lessons in the higher grades easier and more interesting, and will do better work.

In spite of all the time children spend in learning fractions at school, the results are not always satisfactory. The blame for this can frequently be traced to a mechanical approach in teaching the subject. Unfortunately, some teachers believe that as long as they provide mechanical rules they can omit concrete experiences from their teaching. Experience shows that these memorized rules or generalizations simply will not stick unless they are tied up with pupil experience. In response to the problem "Add one-fourth and one-half", it is not uncommon to be told "One-sixth", and yet how many children would offer this incorrect answer if requested to add a quarter to a half dollar?

An effective approach to the teaching of fractions is greatly enhanced by the use of films. Films enable the child to acquire mental pictures of experiences difficult to duplicate in the classroom, serve to consolidate mental images of previous lessons, and add interest and variety to lessons. Slower students especially seem to be able to grasp ideas more clearly and quickly when films are employed.

Using films in teaching means more preparation for the teacher and not less, for she must preview the film before she shows it to the class and must make notes of the content to be able to point out to the class the parts of the film which have the closest bearing on the lesson under study. The concentrated attention given by the pupils to the film results in sharper impressions being gained and often means that less drill will be required.

An excellent series of films dealing with the teaching of Fractions has recently been added to the Film Library. By the skilful use of colour and animation these films explain the addition, subtraction, multiplication and division of fractions in clear and simple terms. The Teachers' Guide and complete text of the narration accompanying each film increases the usefulness of the series.

Films Now Available

T-827 Introduction to Fractions
T-828 How to Add Fractions
T-829 How to Subtract Fractions
T-830 How to Change Fractions

Films Available January 1, 1949

T-854 How to Multiply Fractions
T-855 How to Divide Fractions
T-856 Decimal Fractions
T-857 Percentage

This article will offer suggestions for using each of these films to greatest advantage.

Introduction to Fractions (T-827): Most teachers find that the errors commonly observed in the operations with fractions are due to the pupils simply not knowing what fractions are and what they mean. This film, which is intended for review, helps to fix basic principles in the child's mind by the use of animated drawings. The familiar illustrations used are fascinating and should help even a slow child to understand fractions.

Before showing the films there should be previous classroom discussion of what a fraction is, the method of representing it and the meanings of numerator, denominator and proper and improper fractions.

The teacher should explain to the child that the word "fraction" means fracturing or breaking something into equal parts. Breaking something into two equal parts will illustrate that two halves always result, and breaking it into three parts shows that thirds result. Many objective materials should be used to illustrate that fractions can be of different shapes and sizes. A fraction tells *how* something is divided. For this lesson the classroom might take on the appearance of a work-shop with papers, blocks, books and potatoes being used.

The terms numerator and denominator sound forbidding to the child, but the playing of a game can show their meaning. Call a lesson a game and the interest-door is open. For our "game" have a peeled orange, with the sections separated but held together by an elastic or string, lying on the desk. Ask four pupils to come forward. Call one pupil the Denominator-Finder, and the others, Numerators. Have the Numerators stand in line while the Denominator-Finder counts the number of parts into which the orange is divided. The time he takes is valuable, because it gives the pupils time to see what he is really doing and to think about it. The Finder declares the number of parts into which the orange is divided and names each part as, one-twentieth, two-twentieths etc. He may give one Numerator two parts, another four parts and the other five parts. The Denominator-Finder then puts on the board the number of parts into which the orange was originally divided. The teacher puts a line above this number and each Numerator in turn places his number above. This should be repeated with different Numerators several times.

Such methods take time and preparation, but they are effective. The teacher should keep in mind the maxim, "Serve a lesson as you would a meal, hot and tasty, and the child will have an appetite for it and results will be satisfactory". The teaching of one-half, one-fourth, one-eighth, etc. can be best understood and appreciated if concrete materials such as sheets of paper, apples, etc. are used. Semi-concrete examples such as rectangles and circles can also be used effectively on the blackboard.

To be fully understood, fractions should be applied in a variety of situations. The coin which is called a quarter takes on a new meaning when the child realizes it has this name because it is one-fourth of a dollar. The expression "a quarter to two" has probably been used by the pupil in telling time without full understanding, and the realization that the term derives from a quarter of an hour will stimulate his interest in fractions.

When the pupil realizes the number of thirds, eighths, etc., required to make a whole and understands the origin of the word "fraction", he will readily accept the use of the term "proper fraction" to designate anything which is only a part of a whole. Greater difficulty will be experienced in recognizing the need for the term "improper fraction" to designate anything which is equal to or greater than a whole. Many questions about familiar objects should be asked, such as the following: "I have a whole apple and a half. How many halves have I? How many quarters are there in one dollar and a quarter? There are three pies and a third in a store window. If the pies were cut in thirds, how many pieces would there be?"

After the teacher is satisfied that the class has grasped the meaning of the new term, the film can be shown to greatest advantage. It will increase the effectiveness of the film to have the pupils use the blackboard to show what they have learned immediately after the showing of the film. As each pupil has been impressed differently, new avenues of thought will be opened for each child from this discussion.

How to Add Fractions (T-828). It is not desirable to show the whole of this film, which has ten steps, in one lesson period. Steps one to eight could be shown first and steps eight, nine and ten at a later date after the pupils have learned to deal with fractions having different denominators. Later, the complete film should be shown as a review.

With an adequate background of meaningful experience from previous lessons, the adding of fractions will not be difficult, but before starting this operation, the simplest things should be reviewed again. A new term, "common denominator", must be introduced and stressed. While each teacher will have a different method of presenting this term to the class, the following comparison has been found helpful: "Marbles have a common shape. Apples, have a common shape. What do I mean?" Once the term "common denominator" is understood, the adding of such fractions as one-third and two-thirds presents little difficulty. Adding one-third and one-sixth, however, is much more difficult.

The teacher may find it effective to list common denominators such as 2, 4, 6, 8, 9 and 10 on the board and ask the class such questions as, "To change halves and fourths to a common denominator, which number should be used? What should be used for thirds and ninths? What should be used to add one-third and one-sixth?" Whatever the approach, the child must realize that, before fractions can be added, they must be of the same kind, that is, have a common denominator.

The effectiveness will be increased by following the showing with discussion of different parts of the lesson. Once again pupils should use their classroom blackboard freely to show something of what they have learned. Making problems for each other on the blackboard will result in some quiet, effective thinking.

How to Subtract Fractions (T-829). This film is intended for review, but it may profitably be used as a preview to the subject for beginning classes. In previewing it, children would not understand it all, but it would serve as a good foundation upon which to build. There are eight steps to this film. The first showing could be stopped at number five. The other steps six to eight deal with subtracting fractions which do not have a common denominator. After instruction is given on the fractions dealt with in the second part, the film should be shown again.

Before showing the film the teacher should first review the meaning of fractions, pointing out again that the denominator identifies the parts and the numerator counts them. It should be made clear that since the numerator gives the number of parts, in subtracting fractions of the same kind, it is the numerators which have to be subtracted. The denominator is merely the name of the parts subtracted. The thought should be constantly developed that different kinds

of things cannot be subtracted from one another, and that to subtract different kind of fractions, therefore, they must be changed to fractions having a common denominator.

Difficulties may arise here due to an inadequate understanding of the borrowing process. The teacher must be vigilant to make sure that no bad habits are being formed. It seems best to start with examples where no borrowing is required in order that the pupils may gain confidence in their ability to solve problems. The teacher may begin dealing with borrowing by an example such as the following:

"Father has four and one-quarter yards of silk. He sold one and three-fourths yards. How many yards are left?"

Teacher: How do you find out?

Pupil: We subtract.

Teacher: Then we must borrow, as we often must do in subtracting whole numbers. How many fourths in a whole yard?

Pupil: Four-fourths.

Teacher: Four-fourths and this one-fourth make five-fourths. Now we can subtract three-fourths from five-fourths. How much is left?

Pupil: Two-fourths.

Teacher: Since we borrowed one yard, there are three left. How much is left?

Pupil: Three and two-fourths or three and one-half."

The teacher should point out that in both addition and subtraction the same types of examples are encountered, both like fractions and unlike fractions being met with in each case. Some teachers find it advantageous to teach pupils to subtract like fractions immediately after they have learned to add them. Review and drill are very important. It is well to remember, "Never drive the second nail until the first is clinched."

How to Change Fractions (T-830). This film is designed for the upper Elementary grades and is intended for review. It is primarily concerned with the reasoning behind the method of finding equivalent fractions, and the explanation of why the new fraction is of equal value. The clear explanations given in this film do much to enrich the child's understanding of fractions.

The material of the film moves rapidly and for pupils to follow all details classroom preparation is indispensable. Much practice and teaching in changing fractions and in the meaning of proper and improper fractions, integers and mixed numbers should be given prior to the showing.

Here again a game can serve to introduce the changing of fractions. To teach that one-half equals two-fourths and equals four-eighths, tangible materials such as potatoes of the same size should be used. Take three potatoes, cut one into two parts, one into four parts and one into eight parts and mark the division lines with coloured chalk. Bring three pupils to the front of the class and give one pupil one-half, another two-fourths, and another four-eighths. When each pupil holds up his part of the potato before the class, it will be seen that these parts are equal. Many examples, such as the following should also be written on the board for the pupils to solve:

$$\frac{2}{4} + ? = \frac{1}{2}, \quad \frac{4}{8} - \frac{1}{2} = ?, \quad \frac{2}{4} - ? = \frac{1}{2}.$$

The pupils, while trying to find the answer, discover again that $\frac{1}{2}$, $\frac{2}{4}$, $\frac{4}{8}$ have the same value but different names. If sufficient kinds of practice are provided, and if the practice is properly distributed, the pupils should come to

recognize instantly the equivalence of such common fractions as $1/2$ and $2/4$, $1/2$ and $3/6$, $2/3$ and $4/6$. Once the process is understood the teacher can show the rule for changing larger and more difficult fractions.

It is recommended that this film be shown several times. This will ensure full understanding of the key process of changing fractions, and when arithmetic makes sense to the pupils, it will be remembered.

How to Multiply Fractions (T-854). This film gives an explanation of the theory of the multiplication of fractions. Those pupils who have a good grasp of the meaning of fractions will be able to follow the explanation, but the majority will need to review the explanation after the showing. Even though the explanation may not be completely retained for any length of time, it will increase the child's understanding of fractions, and will both give him confidence in and enable him to remember the rule for multiplying. This film also can be shown profitably more than once.

As a preparatory lesson the teacher should review what is known about multiplying whole numbers. A problem in multiplying fractions, such as finding two-thirds of four-fifths, can be represented graphically. Draw a rectangle five inches long and three inches wide and divide it off into fifteen square inches. Identify four-fifths of the rectangle by lightly shading a region four inches by three inches with coloured chalk. Indicate two-thirds of this by heavily shading a part of the region two inches by four inches with a different coloured chalk. The pupils can then see that the heavily shaded portion includes eight of the original fifteen squares, and will realize that $2/3$ of $4/5$ of an object is $8/15$ of the object. After a number of examples like this the rule of multiplication can be taught and applied.

How to Divide Fractions (T-855). This film is intended to be used as a review. It is designed for teachers who feel that the average child would appreciate an explanation of the reasoning which underlies the rule he is asked to learn. The explanation which the film gives for inverting the divisor and multiplying is sufficiently simple for the average class. The many clear illustrations in the film will aid the child in forming mental images of what takes place in dividing fractions.

Before the new lesson is attempted, dividing by whole numbers should be reviewed. The following approach might be used to develop the next step. Measure a yard stick with a one-foot rule. The rule or "measuring stick" will be found to fit into the yard stick exactly three times. Show the class seven paper disks which are to be divided into thirds ($7 \div 1/3$). The "measuring stick" is one-third of a disk. Ask the class, "How many one-thirds in one?" It will become apparent to the class, that since one disk contains three one-thirds, the seven disks must contain seven times as many one-thirds. Thus $7 \div 1/3 = 21$.

This example can be used to illustrate a fraction divided by a fraction. "Mother made a pie and cut one-fourth out for Dad's supper. Then she cut the rest of the pie into eighths for the children. How many children can be served from the three-fourths of the pie remaining on the plate?" A drawing on the blackboard helps pupils to visualize the appearance of the pie after one-fourth has been removed. Lines are drawn to show three-fourths and to show the remainder of the pie cut into eighths. The class can see that the answer is six.

Children ought to be able to visualize simple problems and not have to go through a thinking process of applying the rule. From this they gain appreciation of the rule that to divide any number by a fraction you invert the divisor. It should be pointed out that inverting unitary fractions simply shows how many times the fraction is contained in one.

Decimal Fractions (T-856). This film is intended to be used in conjunction with classroom instruction. Throughout the film emphasis is placed on the existence of an unwritten denominator in all decimal fractions. There are several excellent illustrations in the film which will assist the pupil in understanding place values.

Experience proves that the approach to the study of decimal fractions should be through the medium of related common fractions. Emphasize that decimal fractions are simply common fractions whose denominators are 10, 100, 1000, etc. In order that this approach may be used effectively, pupils must first have a well-developed understanding of the meaning of common fractions.

The first work with decimal fractions should be "touched off" by some observation or experience in which decimal fractions are found. Mileage in railway time-tables is usually given to one or two places of decimals. Distances on highway signs are sometimes recorded to one decimal place.

From previewing the film and seeing it with the class, the teacher will probably get new ideas which will be of assistance in teaching decimals. This film can profitably be shown a second time to the class.

Percentage (T-857). It is suggested that the teacher read the narration provided on the guide sheet before previewing the film. After the first showing to the pupils, the narrative text may serve as a guide for discussion. The presentation of the lesson in this film is very cleverly done. The film makes percentage come alive for the pupils, and teachers might well imitate the way the lesson is taught.

Before teaching this new work there should be a review of past work having a bearing on the lesson to be taught. Have pupils name a common fraction and decimal fraction. Stress that percentage is a third way of writing fractions. Explain that "per" means "in each" and "cent" means "hundred". Many examples should be given to show the relationship between common fractions, decimal fractions and percentage.

These points should be emphasized: When a fraction is written as per cent the parts are always hundredths. Since the denominators for per cent are always hundredths, we change the one-hundredth into a simple sign which we put after the numerator and drop the dominator. The value of the fraction remains unchanged.

The teachers who give the first lessons in fractions, decimals and percentage have a great work to do. The child's success in Arithmetic, throughout school life and afterwards, depends on the teacher's skill in being able to give him a real understanding of these essentials.

The film plays a great part in making the lesson live, in forming correct mental pictures and adding interest. Planning and perseverance will be needed to use it effectively in the teaching of arithmetic. Moving pictures mean more to children than most forms of presentation for here they participate emotionally and retain more of the facts presented. Teachers will find the films described above valuable classroom aids in their arithmetic classes.

VISUAL EDUCATION IN THE THREE RIVERS HIGH SCHOOL

J. A. B. McLeish, M.A., Principal, Three Rivers High School

In the new Three Rivers High School we have tried to build our Visual Education programme with certain specific objectives at all times in view: the programme should keep a constant flow of educational films through the School; the films should be clearly differentiated in terms of educational impact; they should be presented under conditions of the highest reception and perception value; they should become part of the student's permanent record for the year; and the film programme should be made known to the adult community.

How have we attempted to achieve these specific objectives?

First of all: in regard to the constant flow of films, their differentiation, and the organization of the film programme. We showed in all a total of 141 films last year in our High School. The great majority of these were from the splendid Film Library of the Department of Education, but other sources used included the National Film Society, National Film Board, Associated Screen News, commercial films, and films produced through 16 mm. entertainment film companies. It is at this point that the factor of differentiation comes in. The assumption is perhaps too often made that films are almost indiscriminately useful, an assumption which is apt to arise where the general film programme is unplanned, and the films when they arrive are used as stop-gaps rather than educational media with specific objectives. How different our view at Three Rivers is, may be seen in the innovation which we brought in last year of using the noon period, from 12.50 to 1.10 during a period of winter months, for films. These "Noon Movies", as we called them, were open to any students wishing to attend, and the average attendance was 150. At the noon period, which ordinarily is a lost time, educationally speaking, we put on a wide variety of general interest films, educational in content, but not sufficiently specific in subject content to warrant the expending of a regular teaching period. We used the period as well for second and even third showings of films like "Listen to the Prairies" and "Canadian Landscapes" which the students were so enthusiastic about that they wanted to see over and over.

The noon movie period became one of our best school habits. The students were notably attentive, morale in the student body was promoted, and a great deal of useful and even inspiring information was obtained from the noon periods. A curious and unanticipated by-product of the noon movie experiment was that noon lates almost disappeared! But our chief objective was to channel through the School the type of film which has a definite informational value, the power of widening the student's mental horizon, yet which is subsidiary in time-table priority to specifically-built teaching films; and further to provide a second showing of popular in-school films. In addition to these, over a period of alternate Fridays, we show entertainment 16 mm. films, usually of the type of "Swiss Family Robinson", "Tom Brown's School Days", and the like; but also shown were quite unashamedly, gay tuneful films, and films like "Spirit of Culver", which show one how the modern spirit can be happy and bright, yet full of courage and consideration for others.

It is important that, if possible, there be a permanent place in the school for film exhibition where conditions are conducive to a high reception and perception standard among the students. In Three Rivers we have converted a playroom for this purpose which has worked out admirably. Acoustics have proved satisfactory; there is no interruption from other activities in the School; and the children have come to associate film time with a quiet permanent place where good film manners contribute to the enjoyment of all.

One danger in any school film programme is an organizational bottle-neck. This is likely to develop in the ordering of films, in the selection of films, and in their distribution in the School. The situation can arise, in schools where the problem is not carefully thought through, of films being ordered sporadically, on an unplanned, hit-or-miss policy, and the film programme becoming befogged in the multitudinous details which flow through the life of any Canadian school.

In Three Rivers we have tried to meet these difficulties in the following ways. Each teacher receives each month in duplicate, forms upon which she is asked to write down the films most useful to her for that period. She retains one copy, and the other copy is picked up by a senior student whose whole job, with the guidance of a staff member, is the expediting of forms. The forms are clipped, and weekly film orders are mailed to Quebec every Thursday. It is pleasant to report how unfailing the service of the Film Library is, in that a box of films is always on hand on Monday morning ready for the week. On Monday the senior student in charge circulates a sheet to teachers in the School with the following data. The sheet states: 1. The names of films which have just arrived. 2. It provides a column in which the teacher may state by number the film or films which she wishes her class to see during the week. 3. It provides another column for the naming of periods preferable to her. 4. A third column is provided on which the final allotment of periods as made by the Film Committee is entered, and the sheet is circulated again through the Staff. 5. There is a column in which the numbers of the films ultimately shown in individual grades are finally entered. Although every attempt is made to meet the time preferences of the Staff, the ultimate time allotment obviously has to rest with the Film Committee. On Friday afternoon the films are packed and are picked up by express for return to the Library. The day previous a new film order was in the mail. Month by month the teachers make new film requests. Special requests are of course handled on their merits, and there are sheets for such requests.

Are the films what different teachers need? Will they know how to handle them when film presentation time comes up? We try to safeguard this by a weekly pre-view run on Monday afternoons after school. The advantage of the pre-view can hardly be over-estimated.

Is the film casually shown, without discussion and analysis through board work? If so, the greater part of the advantage of film showing is lost. Last year the Staff devoted a full professional evening to discussion of film and film-strip techniques alone, with discussion of the film, T-697, *Using the Classroom Film*, which illustrates the best uses of the classroom or educational movie. For a child to look at a film which is then not discussed is to have a limited educational experience, but an experience blurred, incoherent, unrelated to specific needs, and vaguely remembered. A keen, pleasant review of the film, with each

child having an opportunity to contribute to the after-film diagramming and notation, is essential to the value of visual education. Then a re-showing, if possible, has great further contributions to make.

Has the film become part of the child's personal and permanent experience? In Three Rivers we have been making a great deal out of individual Film Books. These are simply notebooks devoted entirely to the recording of films shown during in-school time. Some of the books have been a delight to see. Some teachers had children cut out and paste-in related visual material from magazines on the pages opposite their notation of film comment. Some youngsters went so far as to attach pressed wild flowers, starfish, and the like . . . a sort of "live" exhibit, opposite their notation pages. How vivid a film on Mexico becomes on retrospect with such treatment! The pleasure of the film showing is colorfully re-lived, and becomes a permanent and coherent part of one's personal experience.

Finally: is the community at large aware of the value and function of visual education? This involves surely a job of salesmanship in regard to the adult members of the community. This can be done through monthly Parents' Nights for Films, where half a dozen of the best and most enjoyable of educational movies make up an evening which tells the story of visual education better than a dozen speeches or articles. The object here is, of course, to vary the programme and to bring out the best in clear, colorful film education. Again, the readiness of the local Trustees or Commissioners to place their machine, while kept in the School, at the disposal of community groups, is another way in which the value of educational films can be brought home. Home and School groups could use films effectively far more than they do. One can have a good speaker, and still have "Listen to the Prairies" or "Trappers of the Sea" . . . all this, and refreshments, too! In Three Rivers, our Community Centre each Wednesday night opened its programme with a beautiful film, almost always from Quebec, to which any could come if they wished. The atmosphere of the big auditorium, with people free to come as they pleased, and with perhaps the splendid Handicrafts Films from the Library being shown, is a grand experience in adult education and in good Canadianism.

We have found films in Three Rivers an indispensable part not only of our school but of our whole community life.

Children's Records

A notable series of phonograph record albums for children is being developed by Metro-Goldwyn-Mayer. These include *The Bear That Wasn't* (Keeman Wynn); *Hallowe'en* (Lionel Barrymore); *Irving, the Unemployed Horse* (Allan Melvin); *A Kiddie Korncert* (The Korn Kobbler); *Mother Goose Parade* (Betty Martin).

Particularly valuable for use in the primary grades is the *Mother Goose* album. The narrator, Betty Martin, is generally regarded as one of the country's foremost authorities on children's stories. The album includes four records which combine 13 classic ditties for children.

High-school and college students will be interested in the origins of these rhymes, which are said to have been originally satires on famous people of England in the 16th and 17th centuries. Students can make good use of these materials in the study of folk-lore.

THE GRADE X EXAMINATIONS, JUNE 1948

C. E. Ployart, B.A., Inspector of High Schools, Department of Education, Quebec

The number of pupils writing for a general proficiency certificate was 732. Of this number 599 were from the high schools and 133 from the intermediate schools. Of those who wrote in the high schools 73.6 per cent passed; from the intermediate schools 66.9 per cent were successful in obtaining certificates of proficiency. Thus 530 pupils in both classes of schools were awarded certificates.

These certificates were awarded when pupils obtained 100 marks of a possible 200 in English and French and at least 50 per cent in four other subjects. Failure in one subject was overlooked provided the pupil obtained 65 per cent on a minimum course of English, French and four other subjects.

The number of papers and the results obtained in the various subjects of the examination were as follows:

Subject	No. of Pupils	No. Obtaining 80% or Over	No. Failed	Percentages of Failure
English Literature.....	752	79	109	14.5
English Composition.....	753	57	84	11.2
French.....	759	193	107	14.1
Chemistry.....	622	129	77	12.4
Physics.....	384	58	81	21.1
Geography.....	237	40	33	13.9
History.....	722	167	81	11.2
Algebra.....	704	282	112	15.9
Geometry.....	663	209	92	13.8
Latin.....	141	25	19	13.5
Extra English.....	184	16	26	14.1
Biology.....	158	31	30	19.0
Household Science.....	140	9	6	4.2

The following comments from Examiners in the various subjects may be of interest to teachers of Grade X.

English Literature. The Grade X Literature papers this year varied considerably from school to school. One rather common quality, however, was the almost complete absence of stereotyped or memorized answers. The vast majority seemed capable of using some individual imagination. This was particularly true of the poetry question, though Wordsworth's "Daffodils" was introduced again on too many papers, notwithstanding those three or four pupils who managed to redeem themselves by an unusually delicate interpretation and choice of words.

Many students persist in using general rather than specific terms. A poem, play, story, or episode might be "interesting", "beautiful", "well written" though a few warmed the cockles of the heart by writing of the colour, variety, vivid dramatic effect, depth and quality, or atmosphere created by a particular use of words or by a certain scene.

The Bible, too, often received this same exact, pointed interpretation though many were content just to rearrange the wording, such as, "The merciful shall be blessed and given mercy." Vague generalities and platitudes as "Do no evil but do good and God shall reward you" gave little or no idea of how much the pupil really understood.

The sections of the questions on Conrad, Gaskell, DeQuincey, and Macaulay that were related to style were handled with surprising maturity in a few cases. Theme, development of characters and plot, unity of thought, choice of words, and type of presentation were particularly well outlined in these few papers.

A very limited number of those examined attempted the question on Clive, the second choice. At least fifty per cent of these failed to understand the meaning of the words "historical significance". As of yore, many resorted to telling the story, failing completely to give point to the answer.

Looking at the entire picture, however, there is room for considerable hope for the gradual development of a true appreciation of living literature.

English Composition. If the success or failure of pupils depended on grammatical knowledge, not many would have succeeded. This is shown by answers to 1 (a), (b), (c), (e), (f), and 3 (b), (c), (g) and (j).

The verse in the alternative part of No. 5 presented much difficulty to those who chose to express it in their own words.

Pupils who wrote on 6 (c) usually attempted a synopsis of *The Golden Dog*, forgetting that the topic was "Why Amélie Entered a Convent". The same kind of error was frequently made with 6 (a) and (b).

Common errors were:

- (a) Beginning a sentence with "So", "Alas", "And" and "But".
- (b) Misuse of "Guess", "Well", "Certainly", "Nice", "Lovely", "Terrible", "Awful", "Fine", "Anxious" and "Sure".
- (c) "To" for "Too" and "So" for "Very".
- (d) Changing from past to present tense in a narrative.
- (e) Needless repetition of words.
- (f) Omission of apostrophe, and misplacing of period at end of sentence containing a quotation.

French. On the whole this examination was quite easy with the result that many pupils of average ability in this subject received a high mark. The failure per cent, however, was about normal and compared favourably with that of previous years.

It is imperative that pupils know their verbs. In nearly every case those who did not know them either failed or barely passed. The question on the paper which seemed to cause trouble was the one where pupils were required to replace an infinitive by a required verb form. The question was not difficult, but the examiner's opinion was not shared by many pupils!

Why is it that pupils who undoubtedly wish to pass continue to sacrifice needed marks through careless work? The words "Montréal", "Alumette" and "Après" appeared on the paper but a number of pupils failed to write them correctly in the question for translation from English into French.

Had a full mark been deducted for each mistake in the dictation the majority of pupils would have received no credit for that question. This is rather sur-

prising in view of the fact that the selection was taken from one of the books authorized for reading and discussion.

Chemistry. This examination touched upon most phases of the Grade X work and offered considerable choice of questions. Consequently students with a fair knowledge of the subject were able to obtain passing marks. On the other hand high marks were limited to those whose papers showed preciseness, accuracy and adequate laboratory experience.

Several High and Intermediate schools had few or no failures and the papers were of a high standard with good diagrams, systematic arrangement of answers, neat handwriting and the use of clear, concise English.

Some outstanding features revealed by the papers were as follows:

(1) Many students confused these terms:

(a) The *symbol* for an element, the *name* of a *compound* containing the element, the representative *formula* of the *compound*, and an *equation* involving the *compound* or *element*.

(b) Efflorescence and deliquescence.

(c) Amorphous and allotropic.

(d) Physical and chemical properties.

(2) Question 2 (d) was the most disappointing. A surprising number of students stated that liquid air was a *compound* containing hydrogen.

(3) The problem was well handled by all students except in a few schools where apparently this part of the work had been given insufficient attention. Many were unable to cope with (b) part of the problem involving G.M.V.

(4) Most students who did not know the answers left blanks rather than substitute wild guesses. At least they adopted a scientific attitude where their scientific knowledge was wanting.

The following recommendations are made in the hope that they will improve the standard of work, especially in those schools whose marks fell, in most cases, below 65 percent.

(1) More attention and drill upon acquiring an adequate chemical vocabulary.

(2) More attention to diagrams. These should be in pencil, at least two inches high, with labels printed horizontally, and should have cross-sectional shading or cross-hatching in preference to solid shading.

(3) More attention to G.M.V. and the gas laws.

(4) More attention to spelling. It is only reasonable to expect the Grade X student to spell correctly such words as chemistry, gas, coke, oxygen, beaker, etc.

(5) More attention to composition. The use of good English is essential at all times.

Physics. The percentage of failures, 21.1%, was slightly higher than in recent years. This was largely due to the inclusion of more difficult types of questions to test the ability of the better pupils. Fifteen per cent of the pupils scored over 80 and one turned in a perfect paper.

There was wide diversity of results among the schools. In five high schools with 112 pupils writing, 7 per cent of the pupils failed and 27 per cent scored over 80. In seven other schools with approximately the same number of pupils writing (111), 36 per cent failed and 9 per cent scored over 80.

From the answers given to question 4, which required evidence of experimental work, it appears that the pupils of a few schools have had insufficient opportunity of performing or observing the basic experiments called for by the question. In most schools, however, the answers to this question were well done.

The following are the errors which occurred most frequently in question 5, which called for explanation of physical phenomena:

Question 5 (a). An iron bar, whether magnetized or unmagnetized, will attract a compass needle; hence repulsion is the best test for magnetism.

Question 5 (d). Many pupils do not appear to realize that the buoyant force on an object placed in a liquid is due to the pressure (or force) upward on the under side of the object exceeding the pressure downward on the top side, and that at greater depths these two pressures are increased by equal amounts. The buoyant force is therefore the same at all depths; unless, as some of the best pupils noted, allowance is made for the small change in density caused by compressibility and temperature change.

Question 5 (e). A surprising number of pupils stated that food in a pressure cooker cooks more rapidly because the increased pressure lowers the boiling point.

The problems were generally well done, with many schools showing evidence of excellent teaching. In a few schools, however, many of the pupils could not convert the negative Centigrade reading to Fahrenheit.

Geography. Questions 1, 5 and 7 were well answered.

Question 9 elicited compositions on "fish" which had no relation to Geography.

Answers to Question 10 almost totally ignored "political" importance.

Again this year, many students showed complete lack of ability to draw a map having even a semblance of likeness to the configuration of a country or continent.

History. Papers were received from 37 high and 28 intermediate schools. Fifteen high and 14 intermediate Schools had no failures, while 4 high and 5 intermediate Schools had no pupils below a 65 per cent standing.

The completion section proved the easiest, with most candidates receiving a high mark on this. The most popular questions in the remainder of the paper were Nos. 2, 5, 6, 8, 10, 11 and 12. In No. 2, strangely enough, pupils wrote in great detail about the caste system of India but almost completely ignored its community life. In No. 7 the extent of the Church in Western Europe in the Middle Ages was very poorly answered but the work of the monks and friars was described very fully. In No. 12, much more was generally known about Luther than about Calvin.

Very few answered No. 9, on the growth in the power of the kings of France. A somewhat larger number attempted Question 13 on the Thirty Years' War, and practically all did very well.

Algebra. About 40 per cent of the pupils received first class standing. This was partially due to the fact that the last two questions on the paper were not difficult. In many schools the pupils obtained much higher marks than those estimated by their teachers.

The question on graphs was generally well answered. Question 3 proved to be an excellent test of pupils' knowledge of algebra. It was surprising to find that the question on equations was often found to be difficult by pupils who obtained high marks in the question on the simplification of fractions.

Question 4 (a). Many students did not realize that in the final step in determining the value of "x" the expression "c+2" could be divided into "2(2+c)", giving "2" as a result.

(b). The common error here was in neglecting to change the sign in the numerator of the second fraction.

(c). Many, in this question, failed to realize that " $3x - 4$ " was one of the factors of the expression " $3x^2 - 13x + 12$ ", thus unnecessarily adding to their work by multiplying throughout by $(3x - 4)(3x^2 - 13x + 12)$. A few neglected to multiply the "1" in the equation by the lowest common denominator.

Question 5 (a). This part was well done.

(b). A few pupils were unable to factor the expression

$$2a(2x - y) - b(2x - y).$$

(c). With few exceptions, this part was well done.

Geometry. While the majority of candidates acquitted themselves creditably, there was nevertheless a substantial group unwilling to follow the instructions to be observed in working out problems. Particularly was this noticeable in Question 1, which was attempted by almost every student writing.

The properties of a right-angled triangle, involved in answering Question 3, were evidently poorly understood by many pupils, as this problem was the least attempted on the paper. Many who attempted the question, having first obtained the values by arithmetical calculation, reversed the construction.

The entire Section B was, for the most part, well answered; although understanding of the use of loci, both in Questions 8 and 12 (b), was limited.

The theoretical propositions were generally effectively worked out. There was, however, some evidence of memorization rather than the use of reasoning in stating proofs, as indicated by papers where the Particular Enunciation was completely confused and a letter-perfect demonstration followed. The opportunity to present algebraical proofs in Question 11 was competently handled. Many attempting Question 12 (a) failed to understand that it was not the Theorem of Pythagoras that was required, but rather its converse.

In general, it is considered more desirable for students to state briefly the reason behind a mathematical argument rather than to refer to the arbitrary numbering of propositions in a particular text.

Latin. As is evident from the high marks obtained, the Latin paper in Grade X was not difficult. There is the usual criticism that the pupils failed to interpret the questions correctly. Question 1: A great deal of material not contained in the Latin passages was used. Question 2: The explanations of constructions were almost invariably inaccurate and incomplete. Question 7: This question provided an excellent opportunity for a pupil whose marks were low to bring his total up to a pass.

Extra English. The examination in Extra English showed that commendable work is being done in many schools. Some pupils displayed appre-

ciation and understanding in answering the questions. With few exceptions, pupils submitted neat and legibly written papers.

There is need for improvement in the mechanics of spelling, punctuation and sentence structure. It was distressing to note how many pupils had failed to spell correctly the names of the principal characters in the different texts. Pupils should be cautioned against the use of colloquial expressions.

Some pupils were ignorant of the purpose of an essay. In attempting Question 3 they did not give a criticism of one of the essays; instead, they wrote a summary of the essay chosen.

Question 6 was answered well by the majority, but too many pupils, having selected the first part of the question rather than the option, omitted the memory work called for in part (c). Mention was made of the lack of notes to assist readers to understand the selections of Shelley and Keats. Those who attempted the optional part of this question experienced difficulty with part (b)—one pupil wrote that the poem was prose.

If pupils had analysed the questions more closely and had planned their answers more carefully, they could have earned higher marks.

Biology. The high failure percentage in this subject was due to the very poor showing of two schools.

The pupils of most schools showed the results of good teaching and were able to report the results of their own observations clearly. Many confused slightly similar but really totally different terms. For example "amoeba" was confused with "aorta" and even "lymph" with "larva".

Question 5, on human respiration, was the one most often poorly answered, but the understanding of such physiological processes as osmosis and photosynthesis shows improvement from year to year. Many do not realize that a seed is a complete plant and not the reproductive "part" of a plant.

Household Science. The section of this paper dealing with Foods and Cookery was answered with notably more confidence than those sections on Textiles, Clothing and Home Management. Yet in this part also, there were a few weaknesses that were general. The correct form for writing menus was seldom used. White flour products are apparently much more popular than the more nutritious whole grain ones. There was a tendency to suggest canned vegetables, soups and fruits wherever possible instead of emphasizing the fresh foods. The purpose of this was obviously to eliminate preparation. The principles of canning seemed to be quite well understood, but a knowledge of meat cuts and methods for their preparation, was lacking in many cases.

It might be suggested here that more experience in meal planning and preparation be given the pupils. In answering the question given on this subject, some girls showed excellent organization of work, but several had little idea of how to use their time to the best advantage.

The pupils appeared to have a better knowledge of actual construction of clothing than an understanding of the textiles with which they were working.

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Mrs. Mabel A. Perry, Mr. Gerald H. Taylor, Miss Muriel Prew, Mr. J. N. B. Shaw, Miss Barbara Knowles, Mr. Glendon, F. Partidge, Miss Frances LaPenna, Mr. Anthosios Kalpakis, Miss Beulah Halero, Miss Lily R. Gallant, Mrs. Marjorie H. Watt, Miss Freda Parker, Miss Melba McVicar, Mrs. Ruby LeQuesne, Miss

- Grace Powell, Miss Ruth B. Hughes, Miss Jane A. Elliot, Miss Elizabeth Cascadden, Mrs. R. A. Carpenter, Miss Norah McCarthy, Mr. George H. Elsey, Miss Eileen F. Keane, Mr. Stephen Armstrong, Miss Betty Allam, Mr. A. Norman Harris.
- VERDUN:** **Mr. Harold E. Grant**, Miss Alice Hamilton, Miss Clara B. Boomhour, Miss Joyce E. Hayward, Miss E. May Coveydue, Mrs. Nellie Franklin, Miss Florence R. Cole, Miss Doris E. Dugan, Miss Janet M. Shepard, Mr. Ross M. Mercer, Mr. Albert E. Holloway, Mr. Edgar R. Boyd, Mr. Matthew T. Craig, Mr. Frank H. Owen, Miss J. Mabel Mills, Miss Gwen G. Markwell, Miss Helen B. Ferguson, Miss A. Olga Jackson, Mr. A. Milton Smith, Mr. George S. Tomkins, Mr. A. Chas. Ironside, Mr. Leslie F. Bennett, Mr. Ernest H. Hall, Miss M. Kathleen Morrison, Mr. Taliesin Jones, Mr. George O. Lee, Mr. Gordon G. Hall, Mr. Alexander G. Donaldson, Mr. Perry M. Mulock, Mr. Andrew P. Watson, Miss Annie L. McPhail, Miss Jean N. M. Snyder, Miss Isobel J. Hasley, Miss Elizabeth McMonagle, Mr. John A. T. Weatherbee, Miss G. Paige Pinneo, Miss Luella F. McGregor, Miss Margaret H. Laird, Mr. Wilbert E. McCurdy, Mr. Orville E. White, Mr. Robert J. Mullins, Mr. William H. Chodat, Miss Emma Marsan, Miss Margaret J. Watt, Mr. John H. Fransham, Miss Marjorie G. Carter, Mr. Duncan, G. Cumming, Miss Mavis Mitchell, Mr. Harold R. Syrett, Mr. Leonard Blane, Mr. Kenneth R. Cunningham,
- WESTMOUNT (SENIOR):** **Mr. Roland O. Bartlett**, Mr. Arthur J. Buckmaster, Mr. Lewis H. Davies, Mr. Cedric S. Douglas, Mr. Peter F. Dyck, Mr. J. Douglas Lawley, Mr. David E. MacLean, Mr. Kenneth L. Mac-tavish, Mr. Donald N. McRae, Mr. Gifford J. Mitchell, Mr. Lawrence P. Patterson, Mr. Robert A. Peck, Mr. Burton S. Schaffelburg, Mr. Edgar W. Smith, Mr. John K. Snyder, Mr. Parker L. Wearing, Miss Meredith H. Dyke, Miss Millicent A. Dyke, Miss Ruby Hopkins, Mr. Dorothy E. King, Miss Hazel M. Moore, Miss Ruth Sherman, Miss L. Beryl Truax.
- WESTMOUNT:** **Mr. Charles H. Savage**, Miss Gladys M. Banfill, Miss Hazel Bryan, Mrs. M. Joyce Chapman, Miss Lois M. Cochrane, Miss Ethel L. Egerton, Miss Jean M. Hawthorne, Miss Vera M. Jamieson, Mrs. Lilian M. Lancey, Miss T. Doris Lawlor, Miss Catherine S. MacKenzie, Miss M. Mildred MacKenzie, Mrs. Annie R. McKay, Mrs. Rachel G. Smart, Miss Donald D. Smith, Miss Ruth E. I. Smith, Miss Elizabeth S. Wales, Miss Yvonne A. Wilson, Miss Helen W. Wright, Mr. Howard W. Atwood, Mr. Angus M. Bernard, Mr. John M. Bovyer, Mr. Daniel H. Chodat, Mr. Francis N. Fleming, Mr. A. Gerald Fraser, Miss Clarence V. Frayn, Mr. George R. Gay, Mr. Richard T. Germaney, Mr. Kenneth Hill, Mr. Wm. S. Horsnall, Mr. Ernest A. Hutchison, Mr. Kenneth H. Murray, Mr. Shirley E. McKyes, Mr. Morley J. Oke, Mr. James H. Patrick, Mr. Frank E. Sharpe, Mr. Donald M. Smith, Mr. L. Reginald Steeves, Mr. Donald T. Trenholm, Mr. Malcolm A. Turner.

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- FITCH BAY:** **Mr. John G. McGibbon**, Mrs. Bernice C. Crawford, Mrs. Tressa J. Bullock, Miss Ethel M. Wilson.
- FRELIGHSBURG:** **Mrs. Bertha G. Fortin**, Mrs. Esther M. Westcott, Mrs. Shirley Tait.
- GASPÉ BAY SOUTH:** **Mrs. Beatrice E. Coffin**, Mrs. Alice G. Eden, Mrs. Doris E. Eden, Mrs. Sybil J. Eden.
- GASPÉ:** **Mrs. J. M. A. Runnalls**, Mrs. Maynard Miller, Mrs. Howard LeTouzel.
- GATINEAU:** **Mr. Walton L. Snell**, Miss Lillian Evans, Miss Edith MacCallum, Miss Isabel MacCallum, Miss Irene Abraham.
- GEORGEVILLE:** **Mr. C. Ray Martin**, Mrs. Jean C. Armstrong-Martin, Miss Cecilia Jessie Argue.
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- GRENVILLE:** **Mr. A. J. McGerrigle**, Mrs. Robina E. Dumouchel, Mrs. Christy Cook, Miss Vera Moller, Mr. Harry MacKrieth.
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- KINNEAR'S MILLS:** **Miss Alberta Jean Reid**, Miss Mary Elizabeth Brooks.
- LAKE MEGANTIC:** **Mr. John McKinsey**, Miss Colina MacKenzie.
- MALARTIC:** **Mrs. Cecilie M. Griffin**, Miss Lillian G. Gordon, Mrs. Ruth Cameron, Mrs. Corinne LeHeup, Miss Norah Stewart.
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- MATAPEDIA:** **Mr. Gordon Adams**, Mrs. Helena Fraser, Mrs. Helena Lyons, Mrs. Lurena Fraser.
- McMASTERVILLE:** **Mrs. Carrie E. Spicer**, Mrs. Robert E. Osborne, Miss Janet P. Cockerline, Mrs. Crawford Anderson.
- MORIN HEIGHTS:** **Mr. James A. Haughton**, Mrs. Violet M. Seale, Miss Margaret H. Brown, Mrs. Enid C. McCullough Bell, Miss Neita E. McConnell.
- NAMUR:** **Mr. Andrew Emmett**, Mr. Mervyn S. Montgomery, Miss Betty Welburn, Mrs. Evelyn C. Poulter.
- NEW RICHMOND:** **Mr. A. K. Campbell**, Mr. Orville McColm, Miss Eileen Powell, Mrs. Delecie Fairservice, Mrs. Winnifred Sinclair.
- POINTE CLAIRE:** **Mr. Ivan M. Stockwell**, Mr. J. B. Baugh, Miss Dorothy Brayne, Mrs. Ruth Curran, Mrs. L. G. Perras, Miss Sarah P. Edey, Miss Anne H. Gilker, Mrs. Ethel Hay, Miss Sarah I. Lenfesty, Mrs. Grace Mathewson, Mrs. Verda G. Minshall, Miss Grace McQuat, Mrs. L. A. M. Ouellet, Mr. Lucien G. Perras.

RAWDON:	Mrs. Maude M. Pickard , Mrs. Doris McNulty, Mrs. Marion A. Williamson.
ROUYN:	Mrs. Mina B. Duncan , Mrs. Mary Papke, Miss Edythe H. Aiken, Mrs. Evelyn McGarry, Mrs. Needa Heatherington, Miss Ada M. Kerr, Miss Florence M. Duffy.
STE. AGATHE:	Mr. J. H. Jacobsen , Miss L. Woodley, Miss L. Deleuze, Miss M. Doherty.
ST. JOHN'S:	Mr. F. Arthur Williams , Miss Elizabeth B. Cooke, Mrs. Wanita Upton, Mrs. Sylvia Cameron, Miss Claire Duval.
SOUTH DURHAM:	Mrs. Frances D. Halsall , Mrs. Mabel McM. Hughes, Miss Klea Wentworth.
STANBRIDGE	Miss Inez R. Planinshek , Mrs. Irene Phelps, Mrs. Maude Laycock.
EAST:	
VALCARTIER:	Mr. Louis George Brooks , Mrs. Elsie Montgomery, Mrs. Winnifred McCartney.
VAL D'OR:	Mr. A. W. Gilbert Gessell , Mr. Ralph F. Turner, Miss Elizabeth F. Henderson, Miss Riley M. K. MacNeill, Miss Olive D. Hunt, Miss J. M. Goodfellow, Miss Vera K. Lambert, Mrs. Lyla M. Barter, Miss Elizabeth Falle, Mrs. Pearl Gessell.
WAKEFIELD:	Miss Esther M. England , Miss Eleanor A. Kilgour, Miss Dorothy E. Walsh, Mrs. Edmund Brown.
WATERVILLE:	Mrs. Viola L. Gage , Mrs. Iva Spafford, Miss Jean Lowry, Mrs. Marjorie Blier.
WINDSOR:	Mr. Ralph Cooper , Miss Helen M. Driver, Miss Thelma R. Mills, Miss Anna M. Boisvert.
YORK:	Mrs. Fannie Miller , Mrs. Muriel Jones, Mrs. Mabel Eagle.
SPECIAL:	
BRISTOL:	Mr. Wilmer Graham , Mrs. Gwen Smith.
DIXVILLE:	Mrs. Helene Parker , Mrs. M. G. Beaton.
DONNACONA:	Mr. Winston F. Prangley , Miss Margaret C. Hawken.
GLEN SUTTON:	Mrs. Earl Bullock , Miss Queenie Grenier.
IRON HILL:	Mr. W. Edward Dolloff , Mrs. Ona Sanborn.
ISLAND BROOK:	Mrs. Hazel K. Burns , Mrs. Ruth R. Morrow.
JOLIETTE:	Miss Lillian V. Ross , Mrs. Mary Copping.
LACOLLE:	Mr. Raymond A. Montague , Mrs. M. F. Cookman Hadley.
METIS BEACH:	Mrs. Bessie N. Campbell , Miss Mary L. Carmichael.
PHILIPSBURG:	Miss Rosemary Barnett , Miss Clara J. Mountford.
PINEHURST AND E. GREENFIELD:	Mrs. Lillian A. Mills , Mrs. Evelyn Saxhaug.

The Documentary Film

More than a quarter of a century ago, Robert J. Flaherty, weighted down with camera equipment, slogged into the Eskimo country of north Canada and came back with a film called *Nanook of the North*. Now both the film and its maker are full of years and honors, *Nanook* has been shown all over the world, and Flaherty is known as the father of the documentary film.

This week, Flaherty was riding tandem on fame. *Nanook* had just completed a successful revival in Manhattan and begun another swing around the country. And a new Flaherty film, *Louisiana Story*, was to have its U.S. premiere next week.

Today, at 64, Flaherty reaps the rewards of a pioneer who has never stopped pioneering. Before *Nanook*, factual films were mostly travelogues—patronizing glimpses of exotic peoples in far-off places. Flaherty concentrated on the struggles of man against his environment. Because of his choice of settings and subjects, he was sometimes attacked as a romanticist. The "realists" who belabored him later discovered that much of their own "realism" was merely a fad; Flaherty's pictures have not faded nearly so fast.

Time, September 20.

Books and Reading

Reading matter was scarce and expensive in the days of our ancestors; today books are plentiful and cheap. If you ordered a copy of Hugh MacLennan's *Two Solitudes* printed in Babylonian style on clay bricks, trucks would drive up to your door with about 2,000 bricks, enough to build a wall 10 feet high and 70 feet long. Instead, you may sit down with its 370 pages bound in a cover 8¼ inches by 5½ inches, weighing only a fraction over 20 ounces.

Royal Bank of Canada,
Monthly Letter for October.

MINUTES OF THE MAY MEETING OF THE PROTESTANT COMMITTEE

Parliament Buildings, Quebec, May 12, 1948.

On which date was held the regular quarterly meeting of the Protestant Committee.

Present: Dr. G. G. D. Kilpatrick (in the chair), Mr. Howard Murray, Mr. A. K. Cameron, Senator C. B. Howard, Mr. R. Eric Fisher, Mr. Leslie N. Buzzell, Mr. George Y. Deacon, Mr. Harry W. Jones, Dr. S. E. McDowell, Mrs. T. P. Ross, Mr. W. Q. Stobo, Hon. Jonathan Robinson, Mr. W. E. Dunton, Dr. Sinclair Laird, Mrs. A. Stalker, Mr. T. M. Dick, Mrs. Roswell Thomson, Dr. J. S. Astbury, Mr. D. C. Munroe and the Secretary.

The Chairman welcomed Dr. J. S. Astbury on his return to Canada, and congratulated Mr. W. Q. Stobo upon the Honorary Degree which is about to be conferred upon him by McMaster University.

The minutes of the previous meeting were read and confirmed.

Apologies for absence were received from Dr. R. H. Stevenson, Dr. C. L. Brown, Dr. F. Cyril James, Rt. Rev. John Dixon, Hon. G. B. Foster and Dr. W. L. Shurtleff.

The following resolution was carried: The Protestant Committee records its deep sense of loss and of personal sorrow in the death of the Reverend Principal A. H. McGreer, who in the seventeen years of his membership on the Committee gave such devoted and valued service to education, and increasingly won the honour and affection of his colleagues. To the work of the Committee Dr. McGreer brought wide knowledge and experience, a discriminating judgment, a kindling enthusiasm and an unswerving faith in Canadian youth. In the cause of education he counted no duty a burden, no labour a sacrifice, but was at all times ready to give time and strength to the work committed to him. His passing has deprived the Committee not only of a valued member but of a friend who enriched the lives of all who knew him. "He sought the glory of his country: he sees the Glory of God."

The report of the Director of Protestant Education contained the following information: (1) The need for new school buildings is greater than ever; the estimated cost being \$6,000,000 for urgently required buildings, exclusive of those under the Montreal Protestant Central School Board; (2) Since 1930, thirteen new high schools have been built off the Island of Montreal and thirteen extended; Forty-seven intermediate schools have been built or extended during the same period and 139 new rural elementary schools erected; (3) The Deputy Attorney General stated that: "It does not lie within the competence of the Protestant Committee to obtain for the benefit of school boards, legal opinions concerning general cases such as those submitted, but which in their details may vary almost **ad infinitum**." (4) The following school boards are added to the list of those that have taken advantage of the Act to Ensure the Progress of

Education: Cadillac, Campbell's Bay, Argenteuil-Two Mountains Central Board, Stanbridge East, Village of Compton, Terrebonneville, Hudson, Bury and Eaton; (5) The Protestant share of the Public School Fund has been increased this year from \$440,000 to \$500,000. (6) In consequence of the increasing costs of school operations the Department of Education sent a questionnaire to school boards to ascertain their financial status in advance of the usual time. When the replies are received the boards will be notified of the amounts of the grants which will be recommended from the Public School, Superior Education, Poor Municipality, and Conveyance Funds for the session 1948-1949. (7) The buildings under the control of the Chambly School Board are in such condition that: (a) A new three-room school should be built in Mackayville at a cost of \$50,000; (b) A four-room school is needed in St. Hubert at a cost of \$65,000. (c) A four-room extension is needed at the William White Elementary school at a cost of \$60,000. (8) The Pontiac Central School Board was erected on January 8th, and its first meeting was held on March 17th, 1948; (9) The Macdonald Central School Board was erected March 4th and its first meeting held April 24th, 1948; (10) The Attorney General has given his opinion that the term of office of all Central School Boards erected during the session 1944-1945 will end on June 30, 1948. This applies to the Chambly, Richmond-Drummond-Arthabaska and Brome Central School Boards; (11) The financial objective of the Canadian Appeal for children will not be met, but it is hoped that \$3,000,000 will be obtained; (12) The enrollment in Grade XII classes is not satisfactory in some cases as fewer than ten pupils are enrolled in some schools. The courses offered in these schools also appear to be too many, being seven or eight instead of a maximum of five or six; (13) Leading Canadian Poets and Geographical Aspects of the Province of Quebec are two publications produced in the Department of Education recently. The report was received and the action of the Director of Protestant Education in proposing to notify schools of the grants to be distributed approved on the motion of Mr. Murray seconded by Mr. Buzzell. It was provided, however, on the motion of Mr. Cameron, that the sub-committee on grants should meet prior to the September meeting of the Committee. On the motion of Mr. Murray seconded by Dr. Laird it was resolved that the grants for school buildings under the Chambly Central School Board should be 50% of the cost not to exceed the amount stated. The recommendation concerning the minimum number of pupils on Grade XII was referred to the education sub-committee on the motion of Mr. Munroe seconded by Dr. Astbury. On the motion of Dean Laird seconded by Dr. Astbury it was resolved that a number of copies of "Leading Canadian Poets", not to exceed 1500, should be ordered and placed in the schools. On the motion of Dr. Astbury seconded by Mr. Fisher the Director of Protestant Education was asked to interview the Deputy Attorney General with a view to taking such action as may be necessary to ascertain the liability of school boards for accidents caused during extra-curricular activities.

It was proposed by Dean Laird, seconded by Mr. Jones, and resolved that the usual grant of \$500 be allotted for the Kindergarten Assistants Classes in Montreal.

The motion of which Mr. Munroe had given notice was considered that a practising teacher should be recommended to the Lieutenant-Governor in Council for appointment to the Central Board of Examiners. On the motion of Mr. Munroe the matter was referred to the next meeting.

A report was received from the special sub-committee appointed to consider how the centenary of the Act of 1848 granting equality of the English and French language can be celebrated in the Protestant Schools. It contained the following recommendations: (1) A day of celebration shall be set aside in the Protestant Schools in the Province of Quebec to be known as "Le Jour de Français." (2) The date of celebration shall be Friday, November 5th; (3) All teachers who can do so are asked to use French as far as possible throughout "Le Jour de Français"; (4) Information concerning "Le Jour de Français" should be featured in the Educational Record; (5) An article should be procured, if possible, on the aims and purposes of French instruction in the Protestant schools and should include the efforts taken to make such instruction effective and practical in a bilingual province; (6) Prizes should be offered for essays by teachers and pupils on such subjects as the "Value of Bilingualism"; (7) A special prize should be offered for a poem in French; (8) A school assembly should be held and devoted to some aspect of school work in French such as a programme of French plays or debates with songs, and, where possible, films; (9) Home and School Associations should be encouraged to prepare programmes for an evening of French to include songs, a speaker, discussion, and films wherever possible; (10) The Department of Lands and Forests of the Province of Quebec should be asked to supply copies of their magazines generously to the Protestant schools. The recommendations were adopted on the motion of Dean Laird seconded by Senator Howard.

A report of a special committee was presented whose duty it was to draw up a statement concerning the present needs for Protestant school buildings throughout the Province. It was decided to ask the Premier to meet a small sub-committee for the purpose of placing before him the requirements for building in rural areas.

The report of the Board for the Order of Scholastic Merit was submitted containing the following recommendations for the awards of the degree of the Order:

First Degree: Mr. Henry Dumaresq, St. Augustin River, Saguenay County; Mrs. Edna Hayes Cooper, LaTuque High School; Mrs. Martina A. Hill, Farnham Intermediate School; Mrs. Bernice McClatchie, Cowansville High School; Mrs. Doris Neale, Town of Mount Royal High School; Miss Jessie Snaden, Macdonald High School.

Second Degree: Miss M. Edith Baker, High School for Girls, Montreal; Mr. J. G. S. Brash, West Hill High School, Montreal; Mr. A. S. H. Hankinson, Commercial High School, Montreal; Mr. Baxter G. Spracklin, Baron Byng High School, Montreal.

Third Degree: Mr. H. S. Billings, Department of Education; Mr. Orrin B. Rexford, Commercial High School, Montreal.

The following further decisions were made: (1) That Mrs. Roswell Thomson be asked to present the recipients of the first degree; (2) That Dr. John S. Astbury be asked to present the recipients of the second degree; (3) That Dean Sinclair Laird be asked to present the recipients of the third degree; (4) That Mr. Orrin B. Rexford be asked to reply on behalf of the recipients; (5) That the other practices of preceding years be adopted, and that these be left in the hands of the Secretary as usual. The report was approved on the motion by Mr. Dick seconded by Mr. Fisher.

The report of the Legislative sub-committee contained the following recommendations: (a) that the regulations of the Protestant Committee as revised be approved; (b) That when the next complete revision of the regulations is made a special sub-committee should be set up for the purpose and should include those members whose experience can be of value.

That the revision of Regulation 156a of the Regulations of the Protestant Committee be as follows: that all the words after "diligence" be omitted and that article 156a therefore read as follows: "The bursary of teachers in training shall be paid in two equal installments in January and in June, to those only who are certified by the Dean of the School for Teachers to have pursued their course of studies with reasonable diligence." The recommendations were adopted on the motion of Dean Laird seconded by Mr. Murray. The recommendation of the previous meeting was reaffirmed that a new edition of the school law be prepared and printed as soon as possible and that the volume contain also the revised Regulations of the Protestant Committee.

The report of the Education sub-committee contained the following recommendations: (1) That the changes in the Bible reading as outlined be approved for Grades VIII to XI; (2) The following changes should be made in the English course:

A. *Grade VIII*: Dictation; Spelling; Quance: The Canadian Speller, Book III; Grade VIII Language and Composition: Using our Language, Part I; The Bible: Famous Stories of the Old Testament (See Supplement); Poems of Yesterday and Today, Part I, or Poems Chiefly Narrative, Part I; Three of the following: Buchan: Prester John; Doyle: Sir Nigel; Kipling: Captains Courageous; Roberts: Neighbours Unknown; Stevenson: Kidnapped; Trease: Cue for Treason; Developmental Reading: Roberts et al: Let's read, Book I (to be used when teachers find it advantageous).

Grade IX: Dictation; Language and Composition: Using our Language, Part II; The Bible: a biographical study of Jesus, with alternatives of (a) The Books of Esther and Ruth or (b) The biographical study of Peter and Paul (See Supplement); Poems of Yesterday and Today, Part II or Poems Chiefly Narrative, Part II; Three of the following: Doyle: White Company; Dickens: A Tale of Two Cities; London: The Call of the Wild; Kipling: Jungle Book; Shakespeare: As You Like It or Barry: Quality Street; Stevenson: Catriona; Developmental Reading: Roberts et al: Let's Read, Book II (to be used when teachers find it advantageous).

Grade X: Language and Composition: Mastering Effective English, Part I; The Bible: A growing knowledge of God (see Supplement); Poetry: Modern Poems for Modern Youth, Part I; Shakespeare: Merchant of Venice or Twelfth Night; Three of the Following: Cook: Essays in Modern Thought; Kipling: Kim; Kirby: The Golden Dog; Wallace: Ben Hur; McMechan: Sagas of the Sea; Voaden: On Stage;

Grade XI: Composition: Brown: Creative English or Mastering Effective English, Part II; The Bible: The Book of Job (See Supplement); Poetry: Collins: Treasury of English Verse New and Old or Modern Poems for Modern Youth, Part II; Shakespeare: Julius Caesar; Three of the following: Dickens: Great Expectations; Drinkwater: Oliver Cromwell; Lamb: Essays of Elia or Sealey: A Book of Good Essays; Nine Selected plays; Sabatini: Scaramouche; Selected Short Stories.

B. Extra English:

Grade VIII: Replace Prester John by Kingsley's Heroes (substituted for The Vicar of Wakefield recommended at the February meeting).

Grade IX: Delete Twelfth Night.

Grade XI: Omit Midsummer Night's Dream as alternative to Henry V to replace Macbeth.

Grade XII: Substitute Richard II for Hamlet or Henry V.

C. The manuscript of Modern Poems for Modern Youth was submitted and, on the motion of Mr. Murray, seconded by Dr. Laird, it was decided to recommend its authorization.

D. Professor J. A. K. Thomson's "The Classical Influence on English Literature" was recommended for investigation with a view to authorization on the list of supplementary readings.

3. The following changes in the course in English for Grade XII are recommended: (a) An intensive study of representative lyrical poems of different periods is essential; (b) At least three of the following categories of prose non-fiction: (1) Biography and/or Autobiography; (2) Short Stories; (3) Scientific and/or Philosophical Writings; (4) Miscellaneous Prose. (c) The poetry assignment under the Free Reading Division should be deleted and a few representative books and anthologies of prose should be included to illustrate the four categories named in (b); (d) Noad's "Canadian Handbook of English" should be removed from the Course of Study. 4. The following course in Grade XII was recommended to replace that presently authorized: (A) Latin Prose Selections by Breslove, Cameron, King, Toll and Tracy; (B) Latin Poetry Selections by the above authors. Cycle I as previously submitted is to be used for two years and Cycle III in the third year. Mr. Munroe should be authorized to ask the P.A.P.T. Curriculum Committee to suggest a definite assignment for composition in Latin for Grade XII similar to that now authorized in that subject for Grade XI. 5. The report of the Special Biology Committee should be approved including the recommendation for the authorization of the syllabus for Grades X and XI including Vance and Miller's "Biology for You" together

with the following for supplementary reading: Fenton and Kambly: Basic Biology; Moon, Mann and Otto: Modern Biology; Gruenberg and Bingham: Biology and Man; Baylis and Burnett: Biology for Better Living. 6. A revised syllabus in Geography was recommended together with the following textbooks: (1) Grades VIII and IX: Geography for Today, the present edition, in two volumes, one for each grade. (2) Grades X and XI: Stamp: The World, either in the present edition or in its revised form. It was resolved that no guarantee be given for the authorization of Stamp's book beyond the session 1948-1949. (3) The Clarion Atlas, published by Longman's Green to replace the Collins-Longman Atlas. 7. That Brown's "Building the Canadian Nation" replace Burt's "Romance of Canada" as the history title for Grade IX. 8. The following books are recommended for the supplementary reading list: We Three (Grade I), What Next (Grade II) and Paths and Pathfinders (for Grade VII). 9. The outline of Grade I Arithmetic should be adopted next session. 10. "The Little Lame Prince" should be deleted from the Course of Study in Grade IV, and be replaced by "Folk Tales from Many Lands". 11. The Study Arithmetics, which have been authorized tentatively, should be fully authorized. 12. The course in music for Grades I to VII as revised should be authorized. 13. The Director of Protestant Education should be authorized to make contracts with publishers for new textbooks, and also to grant increased prices for textbooks where it is essential. 14. The following books should be included on the list of supplementary readers: Canadian Geographical Journal; English Geographical Magazine; National Geographical Magazine; Nature; The Beaver. 15. A notice should be given that the Special Class for Teachers be not offered after June 1949, and that candidates who wish to enter the School for Teachers should qualify through the regular channels. 16. Brinkley's "An Introduction to General Chemistry" should be authorized for Grade XII. 17. The Director of Protestant Education should be asked to prepare a statement for the next meeting dealing with the educational problems that are arising through the immigration of Europeans into Canada. The report was received and the recommendations approved on the recommendation of Mr. Dick seconded by Dean Laird.

Mr. Fisher reported that the School Board of Foster had agreed to send its pupils to Knowlton next session.

The following are the names of the special committee appointed to consider the Regulations of the Protestant Committee regarding the Central Board of Examiners: Dr. G. G. D. Kilpatrick, Mr. A. K. Cameron, Mr. W. E. Dunton, Dean Sinclair Laird, Dr. J. S. Astbury, Mr. D. C. Munroe and the Secretary.

There being no further business, the meeting then adjourned to reconvene in Montreal on Friday, September 24th, unless otherwise ordered by the Chair.

W. P. PERCIVAL,
Secretary.

G. G. D. KILPATRICK,
Chairman.

THE STORM

The air is hushed and still, an eerie gloom
Shrouds the lulled lake. Among the trees,
The timid birds listen to the distant boom
Of thunder and the sighing of the hot, dank breeze.

Then the wind's assiduous fury, unleashed, does lash
The lake's placid surface into mountainous waves
That roll and swell, surge upon surge, 'til they crash
Into the stony shores and spray-drenched caves.

The sickened sky vomits its torrent on
The earth; and then the thunder dies away
And a rainbow spans the sky, the storm is gone:
The air is sweet, like the dawn of a summer's day.

And so pass our woe and pain and dark dismay,
For the blackest night dawns into rosy day.

David Saunders
10 B
Montreal High School



CLASS DISCUSSIONS PRECEDE AND FOLLOW THE SHOWING OF FILMS

CLASS DISCUSSIONS PRECEDE AND FOLLOW THE SHOWING OF FILMS