

MINNESOTA. UNIVERSITY. DULUTH.

THESES . . .

FREE AND INEXPENSIVE EDUCATIONAL RESOURCES AVAILABLE  
FROM MINNESOTA MANUFACTURERS AND MINING COMPANIES

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A Paper

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by

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## CHAPTER I

### INTRODUCTION TO THE PROBLEM

#### I. STATEMENT OF THE PROBLEM

It was the purpose of this study (1) to make a survey of the manufacturing and mining firms in Minnesota to obtain information pertaining to the educational resources they have available for school use; (2) to compile a list of such resources for the use of classroom teachers; and (3) when possible to annotate this list with information pertaining to type of aid, grade level and content.

#### II. DEFINITION OF TERMS

Business-sponsored. Business-sponsored as used in this study in relation to educational resources, materials or aids are those produced and distributed by firms not primarily engaged in educational enterprises. Firms whose primary purpose is the manufacturing or distribution of certain products may have a separate department devoted entirely to the production and distribution of educational materials. Yet because this is not the firm's primary purpose, materials produced by such departments would be considered business-sponsored.

Educational resources. Educational resources was used in this paper to refer to all materials, persons and trips a teacher uses

for purposes of instruction and aids to learning. This study dealt with the following types of resources produced by Minnesota manufacturers (1) printed reading materials; (2) pictures, charts and maps; (3) samples and displays; (4) films and film strips; (5) speakers; and (6) guided tours or field trips.

### III. JUSTIFICATION OF THE PROBLEM

As the reliance on a single textbook declines in our modern schools, the pressing need for more current, factual and illustrative material increases. A well stocked library is the best answer to the problem, but it is not the complete or the only answer. Many industries recognizing in the schools' need for more educational materials the possibility of providing another service to establish their reputation or another means of advertising have begun to produce educational materials for schools' use.

Teachers have taken advantage of many of these resources. Netzer in her study of the use made of business-sponsored materials in the Wisconsin public schools found that of her sample of 270 teachers 96.7 per cent had used business-sponsored materials that year or the preceding year.<sup>1</sup> The use made of these materials is often affected by the knowledge of their availability, the size and level of the class and the time limit for certain topics. Sinclair

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<sup>1</sup>Lanore Agnes Netzer, "The Use of Industry-Sponsored Materials in the City Public Schools of Wisconsin" (unpublished Doctorial Thesis, University of Wisconsin, 1951), p. 73.

in a study of 636 school systems representing all parts of the United States found that only one school system had never used business-sponsored materials, and more than nine out of ten systems used them regularly or occasionally.<sup>2</sup> This wide spread use of this type of material has caused many educators to evaluate its use.

In general educators agree that business-sponsored materials have many values, but they do not feel that indiscriminant use can or should be made of them. They agree that such materials must contribute to the educational goal of the school if they are to be used. The materials considered best are those which can be used as supplements to other educational materials adding illustrative material, current facts not covered in the textbooks, documentary sources or interesting narratives. Teachers consider the illustrative types of materials most desirably. They will often use pictorial parts of sponsored material and discard the text, because of the difficult reading or lack of interest appeal.<sup>3</sup>

Most of the serious danger in the use of sponsored materials lies in the fact that children and adults have not been taught to read critically. A minority of firms sponsoring teaching aids try to influence the pupil's thinking by propaganda, one-sided presentation

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<sup>2</sup>Thomas J. Sinclair, A Report about Business-Sponsored Teaching Aids (Danville: F.A. Owen Publishing Company, 1949), p. 57.

<sup>3</sup>Netzer, Op. Cit., p. 205.

of facts or an undue amount of advertising. Yet it must be kept in<sup>4</sup> mind that businesses have a purpose in producing these aids. Critical examination of the materials used is necessary to eliminate the possibility of undesirable indoctrination of pupils.

It is also necessary to evaluate this material critically to avoid poorly-prepared materials, those which add nothing to the learning process and those which are too difficult or technical. Studies have shown that much of the sponsored material produced is beyond the reading and interest level of the pupils with whom it might be used. Four out of five intermediate grade elementary teachers in one study felt that the reading was too difficult, while three out of four social studies teachers made the same complaint.<sup>4</sup>

The distribution of available resources to meet the needs of the individual classrooms as to topic and time of presentation is one of the major problems obstructing the efficient use of business-sponsored resources. Teachers feel that they do not know where to obtain materials, and that announcements concerning such materials are not specific as to what they contain or the grade level for which they are best suited.<sup>5</sup> There are a number of good listings of

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<sup>4</sup>L. Warren Nelson, "Schools and Industries Examine the Need for Improvement of Sponsored Materials," The Nation's Schools, XLVII (June, 1951), p. 44.

<sup>5</sup>Netzer, Op. Cit., p. 103.

sponsored materials available. They are, however, confined to those materials put out by large firms of national importance. If materials from these firms alone are used, the excellent local resources of smaller firms may go untapped. With the current swing toward closer school and community co-operation the resources of local firms have become of vital importance. It is these firms which will furnish speakers for special programs or class activities, permit field trips through their establishments and give the close co-operation so needed in the program of the community school.

This study sought to fulfill this need for information about local resources by making a survey and a listing of the available resources from Minnesota manufacturers.

#### IV. SURVEY OF RELATED LITERATURE.

In the past two decades there has been a considerable amount of literature written dealing with the various aspects of the problem of using sponsored materials in the schools.

The earliest literature in the field was concerned mainly with the listing of sources of available materials for classroom use. Even today this type of literature out-numbers all other types in the field of sponsored materials. Some magazines have a section devoted to such listings in each issue. Others have an occasional issue with a special section listing free materials. Some periodicals in the field of home economics and others have a system where-

By one need only clip a coupon and send it in to receive the current free materials listed. Larger listings of free materials on a national scale are put out by the Educators' Progressive League, The Field Enterprises and the George Peabody Teachers College. These lists are frequently revised to provide listings of current materials.

In recent years magazine articles telling of the successful use and method of using sponsored materials have appeared in most educational periodicals. In 1953 the Association for Supervision and Curriculum Development published a pamphlet on the use of free materials in the classroom.<sup>6</sup>

With the increased distribution and use of sponsored materials came the awareness of the need for evaluation. Educational periodicals carried articles stressing the need for careful selection and evaluation. Administrators became concerned with the problem. They and teachers alike were asking for aid in the selection of these materials. In 1955 recognizing that simply to allow indiscriminate use or to ban all use of sponsored materials was not the answer, and that each school situation was different, the American Association of School Administrators tried to give the basic criteria for evaluation and selection of free materials in their

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<sup>6</sup> Association for Supervision and Curriculum Development, NEA, Using Free Materials in the Classroom, (Washington D.C.: Association For Supervision and Curriculum Development, Department of the National Educational Association, 1953).

pamphlet, Choosing Free Materials for Use in the Schools,<sup>7</sup>

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Studies of various types have been made to determine the extent of use of sponsored materials, teachers reactions to them, and an evaluation of materials used. One of the more recent studies seeking to determine the use of business-sponsored materials was made in Wisconsin by Lanore A. Netzer.<sup>8</sup> A more comprehensive study covering both educators and business concerns viewpoints on the practices of production, distribution, use and evaluation of business-sponsored materials was made by Sinclair.<sup>9</sup>

The volume of recent literature related to business-sponsored resources proves that it is a problem of current importance. Teachers, administrators and businesses are concerned with developing usable materials, distributing them to those who need them and evaluating the materials and the use made of them.

#### V. LIMITING THE PROBLEM

It was recognized by the writer that a complete survey of all

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<sup>7</sup>American Association of School Administrators, NEA, Choosing Free Materials for Use in the Schools, (Washington, D.C.: American Association of School Administrators, Department of the National Educational Association, 1955).

<sup>8</sup>Netzer, Op. Cit.

<sup>9</sup>Sinclair, Op. Cit.

business-sponsored teaching resources in Minnesota was impossible, because of the vastness of the field and the writer's limited financial resources and time. The possibility of dividing the businesses of Minnesota into types such as communication and transportation businesses, commercial businesses and manufacturing businesses was explored. Each of these types has available valuable teaching resources. The choice limiting this paper to the manufacturing businesses and the allied mining industry was made arbitrarily on the basis of the writer's preference.

## CHAPTER II

### THE PROCEDURE OF THE STUDY AND METHODS OF REPORTING

#### I. SELECTION OF CASES

After the decision to limit the study to the manufacturing and mining industries of Minnesota was made, it was necessary to obtain the address of these companies. This was found in the Minnesota Directory of Manufacturers put out by the Minnesota Department of Business Development.<sup>10</sup>

As the complete listing contained the names of more than five thousand firms, it was necessary to limit the number of cases. It was assumed that all firms listed as employing less than eight workers were not of sufficient size to have either the finances or personnel necessary for producing teaching aids.

A sample study of the Arrowhead Area, or the Eighth Congressional District, containing Cook, Lake, St. Louis, Koochiching, Itasca, and Carlton counties and the city of Minneapolis was made to provide a basis for further limiting the number of cases. There were 426 cases in the sample study. Each was sent a letter explaining the project and a questionnaire. (See Appendix) Ninety-two answers

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<sup>10</sup>Minnesota Department of Business Development, Minnesota Directory of Manufacturers 1955 (St. Paul: Minnesota Department of Business Development), 1955.

were received from the 426 sample cases. It was found that those companies employing the greatest number of persons answered and sent material more frequently than did smaller companies. (See Table I, page 11)

The results of this preliminary study showed that those firms designated in the Minnesota Directory of Manufacturers as not having returned the questionnaire card sent out by the Minnesota Department of Business Development and those employing less than twenty-five persons responded less than ten per cent of the time. Even those of these groups who returned the questionnaire had little to offer a classroom program. Therefore the writer felt that to drop the other firms represented by these groups would not be detrimental to the study.

The remaining cases were then sent copies of the same letter and questionnaire used in the sample study. From a total of 1436 cases 212 responded.

## II. METHOD OF REPORTING CASES

The major portion of this study has been devoted to a summary of the results of the survey of Minnesota manufacturers and a listing of the materials obtained from them. Since a completely alphabetical listing would require a teacher to check the entire list when looking for materials, broad topical categories have been set up. The topics used were (1) building materials; (2) clothing; (3) farm appliances

TABLE I

## PER CENT OF FIRMS ANSWERING IN SAMPLE STUDY

Size of firms by number of employees	No. of firms contacted	No. of firms answering	% of firms answering
9 - 24	39	4	10.3%
25 - 49	24	9	36.2%
50 - 99	78	17	21.8%
100 - 249	57	8	14%
250 - 499	71	21	29.6%
500 - 999	48	24	50%
1000 - 2000	5	2	40%
No. not given	109	7	6.4%

and needs; (4) food; (5) machinery parts, and other metal products; (6) mining; and (7) miscellaneous. It was inevitable, as in any listing of types that there would be considerable overlapping of topic and products. The writer has sought to make a distinction of types only for the convenience of teachers using the listing; related topics should be explored for additional information they might contain.

It was the writer's desire to add to each listing information as to type and content of material, grade level and amount of advertising. However, many firms sent only lists of material they had available. These materials were listed under the manufacturer's name with the note that such a list is available. In all cases films and movies were not evaluated by the writer personally; the description of content and grade level are those suggested by the manufacturer.

When companies in Minnesota have their offices or headquarters in another state or are affiliated with an association with headquarters in another state from which their materials are distributed, the Minnesota firm was listed and under it the address to which requests for materials should be sent.

The assigning of material to topics and the annotation of the materials was done arbitrarily by the writer in accordance with her judgments on the material. It was recognized that this is not the best procedure, but it was found to be necessary for the completion of this study.

## CHAPTER III

### THE RESULTS OF THE STUDY

#### I. THE STATISTICAL RESULTS

Answers were received from less than fifteen per cent of the firms used as cases in the study. This was a too small per cent of returns from a survey to be used to support any definite conclusions. However, because this survey asked for specific kinds of material, the writer has concluded that those firms not answering had a policy against supplying teachers with the types of educational resources covered in this study or did not have these resources available. Firms manufacturing products for other concerns frequently wrote saying they were not allowed to distribute such materials because of business contracts. Government restrictions made it impossible for several firms to offer information on their product. These answers from some firms and the greater per cent of smaller firms not answering tend to support the above conclusion.

The results of the study show that smaller firms did not have as many educational resources available, and that a smaller per cent of these firms than of the larger ones returned the questionnaire or an answer. A greater per cent of the larger firms answered and sent a greater amount of information as to usable material and resources. (See Table II and III, page 14 and 15). A majority, 61.4 per cent, of the answers received contained samples or information

TABLE II

## PER CENT OF FIRMS ANSWERING IN THE TOTAL STUDY

Size of firms by number of employees	No. of firms contacted	No. of firms answering	% of firms answering
9 - 24	259	16	6.2%
25 - 49	374	49	13.1%
50 - 99	255	36	14.1%
100 - 249	211	32	15.2%
250 - 499	80	29	36.2%
500 - 999	49	34	69.4%
1000 - 2000	7	5	71.4%
over 2000	4	3	75%
No. not given	189	9	4.8%
Mining Companies	8	4	50%

TABLE III

## PER CENT OF USABLE RESOURCES RECEIVED FROM ANSWERING FIRMS

Size of firms by number of employees	Number of answers	% of usable resources
9 - 24	16	50%
25 - 49	49	46.9%
50 - 99	36	55.6%
100 - 249	32	56.3%
250 - 499	29	75.9%
500 - 999	34	82.4%
1000 - 2000	5	100%
over 2000	3	66.7%
No. not given	9	55.5%
Mining Companies	4	75%

of material and resources which in the writer's opinion can be useful to teachers; 12.7 per cent of the material sent was strictly for advertising purposes; and 25.9 per cent of the answers stated the firm had no educational resources available.

Most of the printed materials received were beyond the reading level of the elementary pupils. Some of the large companies and the associations to which some companies belong have departments for the production of educational materials. These departments often employ educators to develop and evaluate their materials. In general Minnesota manufacturers have not had their materials graded. Materials which would be used most often in the elementary grades have a more advanced reading level. Even high school students would have difficulty comprehending some of the technical materials received.

Companies which have no other resources can add much to the program when they allow tours of their establishments or provide speakers for the classroom. These firms were listed when they replied by letter or returned the questionnaire. A school will often find it possible to make arrangements with a local firm which felt it did not have enough to offer to answer the questionnaire in the writer's survey. When educational objectives are achieved the use of such community resources is valuable in adding real experiences to the pupils' education.

## II. LISTING OF EDUCATIONAL RESOURCES

The materials received have been listed under the name of the

Minnesota firm from which they were obtained. These firms have been listed under general topics for the convenience of those who will use this list. When a firm has an educational department or an association which has a catalog or list of aids available from the firm, the name of the list was given rather than all the separate materials. All materials annotated in the listing, except films, have been received and evaluated by the writer. When a description or grade level has been given for films it was suggested by the company. Other materials not seen by the writer were designated as such. Under the topic of miscellaneous those materials similar in nature were listed together.

#### 1). Building Materials

ANDERSEN CORPORATION: Bayport, Minnesota.

Advertising pamphlets showing the styles of windows the company makes and having pictures of house interiors which could be used in classes on home decoration are available.

A colored film strip on the product, suitable for high school age pupils is available.

ARROWHEAD STEEL BUILDINGS INCORPORATED: 367 Garfield Avenue; Duluth.

A colored film strip on the product, suitable for high school age pupils may be borrowed. The school must pay the postage charges.

Speakers may be arranged for local schools.

Guided tours of 15 to 20 persons of high school age are possible.

M. CAPP MANUFACTURING COMPANY; 1143 Dupont North; Minneapolis.

An advertising pamphlet showing styles and floor plans of precut houses which could be used in classes on home planning and decorating is available.

EZ-WAY SALES INCORPORATED; Post Office Box 300; Saint Paul Park.

Advertising leaflets showing styles of sliding stairs and door frames are available, but of little value.

A black and white movie and a colored 16mm sound movie on the product are available.

Speakers may be arranged for local classrooms.

Guided tours of the firm are possible.

FLOUR CITY ORNAMENTAL IRON COMPANY; 2637 Twenty-seventh Avenue South; Minneapolis.

Pamphlets containing technical sketches of metal window and door frames and other architectural products are available. The pictures are small and the material too advanced for school use.

MAG ARTHURS COMPANY; 936 Raymond Avenue; Saint Paul.

Samples of fire brick and insulating panels may be had on loan for two weeks.

MULTI-CLEAN PRODUCTS, INCORPORATED; 2277 Ford Parkway; Saint Paul.

Your Floors and How to Maintain Them is an advertising pamphlet on different types of floors and the methods of care recommended by this company.

A colored film strip on floor treatment, a colored sound movie on floor maintenance, and a black and white film on sales promotion are available.

Guided tours for groups of about twenty persons may be arranged.

NU-PLY CORPORATION; Midway Drive; Bemidji.

Samples of hardboard and nu-ply may be had for a school collection.

Speakers may be arranged for in local schools.

Guided tours may be arranged for small groups.

OGHS BRICK AND TILE COMPANY; Springfield, Minnesota.

Sample panels of brick are available for exhibits.

Guided tours for senior high school groups of about twenty persons may be arranged.

PAGE AND HILL HOMES; Shakopee, Minnesota.

An advertising pamphlet showing styles and floor plans of homes is available for use in classes in home planning and decoration.

Guided tours may be arranged for school classes.

SAINT GERMAIN BROTHERS, INCORPORATED; 5 West First Street; Duluth.

One or more movies on glass and paint manufacturing and the history of paints are available.

SCOTT GRAFF COMPANY; 2402 West Michigan Street; Duluth.

Advertising pamphlets with pictures of house interiors which could be used for decorating ideas by a class in home decoration are available.

Speakers may be arranged for local classrooms.

Guided tours for high school group of about twenty persons may be arranged.

SNELL SASH AND DOOR COMPANY; 1400 Selby Avenue; Saint Paul.

Advertising materials with pictures of types of doors are available.

SPEED-O-LAQ PRODUCTS COMPANY; 2386 Wycliff Street; Saint Paul.

Paint color charts are available.

TWIN CITY CONCRETE COMPANY; 6th Avenue and Main Street; Minneapolis.

How to Do Your Own Cement Jobs is a pamphlet giving directions for home projects in cement, such as patching, setting posts, laying walks and patios, making pools, tree surgery and others. This pamphlet costs \$.35, but one copy to a class may be had without cost.

A black and white sound movie on concrete construction may be

rented for \$5.00 a month. It is suitable for pupils twelve years and older.

UNITED STATES AIR CONDITIONING CORPORATION; Como Avenue Southeast; Minneapolis.

Why RK? is a pamphlet giving a brief story of air conditioning. The discussion of air conditioning systems other than their own is very meager. The story given is somewhat biased. The diagrams of methods of air conditioning might be used in junior high science classes.

Guided tours may be arranged.

WABASH SCREEN DOOR COMPANY; 2222 Elm Street Southeast; Minneapolis,

Speakers are available to schools within twenty-five miles by arrangement.

Guided tours for high school age pupils may be arranged.

WACO MANUFACTURING COMPANY; 3565 Wooddale Avenue; Minneapolis.

An advertising pamphlet on types of scaffolding and how to put them together is available.

Speakers may be arranged for local classrooms.

WESTERN PAINT COMPANY; New Duluth Post Office; Duluth.

Paint charts are available.

A colored film strip on paint for high school age pupils is available.

Guided tours for single classrooms may be arranged.

WOOD CONVERSION COMPANY; First National Bank Building; Saint Paul.

Samples of fiber board and insulation are available.

A black and white film strip, a colored film strip and a colored sound movie on the company's products are available.

A guided tour of the Cloquet plant may be arranged for pupils over eight years old.

WOOD CRAFT COMPANY; 525 Lincoln Avenue Southeast; Saint Cloud.

Guided tours through the company which makes custom woodwork and cabinets may be arranged.

## 2). Clothing

CLUETT, PEABODY AND COMPANY, INCORPORATED; Virginia.

The Story of Cotton is a pamphlet telling the story of the production of cotton cloth of the type used in shirts. The story is illustrated with photographic reprints of the processes in the factory, a copy of the large wall map showing areas of cotton production and swatches of common types of cloth used in shirts. The pamphlet is suitable for upper elementary and junior high school classes.

A black and white wall map of the United States with pictures of major products of the different areas is available. The stress is on cotton production. The map is not complete in the products

shown or eye-appealing.

Enterprize is a colored, sound, 16mm movie with a teachers manual available. It stresses the free enterprize system.

These materials should be ordered from Cluett, Peabody and Company, Incorporated; 10 East 40th Street; New York 16, New York..

CONNOLLY SHOE COMPANY; Stillwater, Minnesota.

Hunted for its hide is a booklet telling of the use of kangaroo hides for shoes and interesting facts about the animal and Australia. It is written for junior high classes or above. One copy of the large booklet per class is available. However, a small leaflet with the same title condenses the information, and individual copies for each pupil may be secured.

Guided tours may be arranged for pupils in the seventh grade or above.

WALTER HAERTEL COMPANY; 2840 Fourth Avenue South; Minneapolis.

Speakers on the subject of garment storing may be arranged for by home economic classes.

Guided tours of the company may be arranged for groups of high school pupils.

MUNSINGWEAR INCORPORATED; 718 Glenwood Avenue; Minneapolis.

News about Nylon is a booklet giving general information about the use of nylon in garments. Some use might be made of

this booklet in home economic classes.

A booklet on the manufacture of Munsingwears hosiery is available. It is intended for advertising purposes.

### 3). Farm Appliances and Needs

BEEBE LABORATORIES; Post Office Box 2106; Saint Paul.

Leaflets on disorders and diseases of farm animals and the treatment of them with the companies products are available to classes in agriculture.

Speakers on animal diseases and treatment may be arranged for local agriculture classes.

GENERAL DAIRY EQUIPMENT INCORPORATED; 2420 Talmage Avenue Southeast; Minneapolis.

Advertising catalogs with pictures of various types of dairy equipment are available.

HUBBARD MILLING COMPANY; Mankato.

Literature on the feeding of poultry and livestock is available for schools in southern Minnesota. None was sent for the writer's listing.

JOHNSON HYDRAULIC EQUIPMENT COMPANY; 515 West 78th Street, Minneapolis.

Advertising leaflets showing types of farm equipment are available.

O. W. KROMER COMPANY; 1120 Emerson Avenue North; Minneapolis.

Advertising materials with pictures of various types of power sprayers are available.

A black and white sound movie and a colored film strip on sprayers and the spraying of crops are available to agriculture classes.

Speakers may be arranged for local agriculture classes.

Guided tours of the company may be arranged for high school boys.

MINNEAPOLIS-MOLINE COMPANY; Minneapolis.

The educational materials available were not sent for the writer's listing.

A colored sound movie and a set of slides on farm machinery are available for classes. They would be suitable for junior and senior high school classes.

Speakers for classes in agriculture may be arranged locally.

Guided tours may be arranged for high school classes.

MINNESOTA FARM BUREAU SERVICE COMPANY; 101 East Fairfield Avenue; Saint Paul.

Educational materials of various types for agriculture classes are available. None were sent for the writer's listing.

Samples of fertilizer may be had for exhibits.

Guided tours may be arranged for high school students.

NORTHERN DRYING COMPANY; Olivia, Minnesota.

How to Feed Dehydrated Alfalfa is a small advertising pamphlet.

Samples of dehydrated alfalfa may be had for exhibits.

Speakers may be arranged for agriculture classes in schools up to fifty miles away.

Guided tours may be arranged for agriculture classes.

NORTHRUP, KING AND COMPANY; 1500 Northeast Jackson; Minneapolis.

Advertising leaflets containing information about seeds are available.

A colored sound movie suitable for agriculture classes is available. Return postage must be paid.

Speakers may be arranged for in areas where local representatives are available.

Guided tours may be arranged for groups of about thirty.

Pupils should be about twelve years old or older if they are to understand what they will see.

RILGO LAMINATED PRODUCTS, INCORPORATED; 2591 First National Bank Building; Saint Paul.

Advertising pamphlets with pictures and floor plans of various types of barns are available.

Sample or models may be borrowed for two weeks.

Speakers may be arranged for local agriculture classes.

Guided tours for high school students may be arranged.

SPENCER KELLOGG AND SONS INCORPORATED; 104 Grain Exchange Building;  
Minneapolis.

Samples of oil or oilmeals may be had for exhibits.

VAN DUSEN HARRINGTON COMPANY; 660 Grain Exchange; Minneapolis.

Visual Aids Services is a mimeographed list of movies and slide sets on many subjects in agriculture.

Speakers may be arranged for by agriculture classes in grain growing areas.

Guided tours through the Grain Exchange may be arranged for agriculture classes.

The above materials are available from the F. H. Peavey and Company; 912 Grain Exchange; Minneapolis.

WESTMAN SILO COMPANY; Princeton, Minnesota.

Samples of silo stone weighing thirty-one pounds are available for exhibits, but must be got from the plant.

Guided tours may be arranged for agriculture classes.

#### 4). Food

AMERICAN CRYSTAL SUGAR COMPANY; East Grand Forks, Minnesota.

The Sugar Beet Goes to School is the teacher's manual of the resource unit on beet sugar prepared by the United States Beet Sugar Association. Thirty-five pupil folders are sent with each manual. The unit is prepared for the upper elementary grades.

Facts about Beet Sugar in Minnesota is a pamphlet which tells of the industry and its value in Minnesota. It may be used with the unit though the reading level is that of junior high school pupils.

The Production of Sugar from Sugar Beets is a pamphlet giving a brief history of sugar and a description of the process of making sugar from beets. The reading in this pamphlet is on the upper junior high school level.

A folder of pictures showing the growing of sugar beets and the processes of sugar making is available.

The Story of Beet Sugar is a series of four colorful wall charts illustrating the growing of sugar beets, the extracting of sugar from sugar beets, the products of the sugar beet and the value of the beet sugar industry in the American economy.

Arrangements may be made with Miss Dorothy Carlson; Western Beet Sugar Producers; 603 Foshay Tower; Minneapolis, for a speaker.

Guided tours may be arranged through plants at Chaska, East Grand Forks, Moorhead and Crookston.

The above materials should be ordered from United States Beet Sugar Association; Tower Building; Washington 5, D. C.

ANDRESEN-RYAN COFFEE COMPANY; 14 East Michigan Street; Duluth.

The Story of Coffee is a small folder giving brief story

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of coffee illustrated with colored pictures. One for each pupil is available.

Trade Policy in Inter-American Relations is a leaflet discussing the trade between the United States and Latin American Countries. Reading is on the level of junior high school pupils.

How You Can Make Good Coffee Every Time is a small booklet telling how to make good coffee.

Coffee 'Round the World is a booklet of coffee recipes from other countries.

A chart giving interesting facts about coffee is available. This chart is black and white with too much reading material to be effective for a bulletin board.

Samples of coffee beans may be had for exhibits.

A colored film strip and a colored sound movie about coffee are available.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for pupils above eight years of age.

**ARMOUR CREAMERIES; Pipestone, Minnesota.**

Guided tours through the creamery which specializes in shell eggs may be arranged.

**BIG STONE CANNING COMPANY; Ortonville, Minnesota.**

Guided tours for pupils nine years old and older may be

arranged.

BORDEN FOOD PRODUCTS COMPANY; Owatonna, Minnesota.

Welcome to Borden's Ice Cream Plant is a pamphlet describing the processes of ice cream manufacturing. The pamphlet is written in a style suitable for junior high school pupils.

Choice Cheese Cakes is a leaflet of recipes for cheese cakes. It is available for home economics classes. Use of the companies products are called for in the recipes.

Borden's Eagle Brand 70 Magic Recipes is a pamphlet of dessert recipes. Use of the companies products is called for in the recipes.

Is Yours a "Weighty" Problem? is a small booklet giving suggestions for healthful weight reduction.

A classroom weight chart is available for recording pupils weight three times during the year.

In cities having a Borden plant speakers may be arranged for classroom visits.

Guided tours of some Borden plants are permitted.

The above materials may be obtained from The Borden Company; 350 Madison Avenue; New York 17, New York.

BRIDGEMAN-RUSSELL COMPANY; Duluth, Minnesota

Mimeographed sheets of materials available from the Dairy Council of Duluth, Superior and Cloquet may be got from The Dairy

Council of Duluth, Superior and Cloquet; 1902 West Superior Street; Duluth. These materials are free to the schools in the area. Printed materials are graded.

Health Education Materials is a catalog of educational materials available from the National Dairy Council; 111 North Canal Street; Chicago. The catalog should also be obtained from the above address.

Guided tours through the company may be arranged.

CARGILL INCORPORATED; 200 Grain Exchange; Minneapolis.

A colored sound movie describing the activities of Cargill in transportation of grain and feeds from the producers to the processors and the production of formula feeds is available.

Speakers may be arranged for local classrooms.

CENTRAL DAIRY PRODUCTS COMPANY; Willmar, Minnesota.

Meet the Queen is a comic type booklet of interesting facts on the uses of milk in other times. It might be used as an interest stimulator with elementary pupils.

Jackie and Janie Learn the Story of Ice Cream is a comic type booklet on the development of ice cream through the ages and present day manufacturing. It appeals to elementary children.

Your Answers about the Ice Cream Industry is a small booklet of interesting facts about the ice cream industry.

The Milky Way, Fairest of the Fair, Butter Late Than Never and

Milk for Big Mike are small comics using favorite childrens' <sup>32</sup> characters to stress the need and use of milk. The material is not factual but appealing to younger children.

CREAM OF WHEAT CORPORATION; 730 Stinson Boulevard; Minneapolis.

A wall chart showing the vitamin content of foods is available to home economics classes. Advertising is prominent.

DULUTH UNIVERSAL MILLING COMPANY; 605 Board of Trade Building; Duluth.

Teaching Materials Catalog is a catalog of materials available for home economics classes and health programs. Most of the materials have to do with wheat products. The catalog should be ordered from the Wheat Flour Institute; 309 West Jackson Boulevard; Chicago.

Grain Market is a small pamphlet containing a picture story of a modern grain exchange. It is written for pupils in junior or senior high school.

Samples of grain and types of flour milled may be had for exhibits. These should not be kept from year to year, because they will become infested with bugs.

Guided tours may be arranged for school children in the fourth grade or above. They will be given an opportunity to gather their own samples at this time.

GARROT CANDY COMPANY; 249 East Fourth Street; Saint Paul.

A black and white sound movie on the product is available,

but it is rather old.

A speaker may be arranged for local classrooms.

Guided tours of the company may be arranged for pupils eight years old and older.

GENERAL MILLS, INCORPORATED; 400 Second Avenue South; Minneapolis.

A graded educational program on nutrition is available with readers for the first four grades, pamphlets for older pupils, posters to accompany the lessons, and a teacher's guide and activity book. In the back of the Teacher's Activity Book are listed other materials for use with adults and older pupils. The cost of these materials is listed below. However, a price list and order blank should be sent for before ordering the materials you desire.

Readers; <u>Eat and Grow</u> (1st grade)	\$ .20 each
<u>Working and Playing</u> (2nd and 3rd grade)	\$ .20 each
<u>Letters to Tony</u> (3rd and 4th grade)	\$ .20 each.
<u>Teacher's Guidebook</u>	\$ .35 each
<u>Teacher's Activity Book</u>	\$ .35 each
Posters: <u>Mother Hubbard's Cupboard</u>	\$ .20 each
<u>Basic 7 Chart</u>	\$ .20 each
<u>A Day with the Wide-Awakes</u>	\$ .10 each
<u>Which Are You?</u>	\$ .10 each.
<u>Cereal Grains Poster</u>	\$ .10 each.
<u>Learning Together About Foods</u>	\$ .10 each.

Other Pamphlets:	<u>A Nutrition Guide</u>	\$ .20 each.
	<u>The Story of the Cereál Grains</u>	\$ .20 each.
	<u>Letters to Parents</u> (leaflet)	\$ .03 each.
	<u>Three Ways to Evaluate Nutrition</u>	\$ .20 each.
	<u>Education</u>	
	<u>A Superintendent Speaks</u>	Free.
	<u>What Do Children Eat</u>	Free.
	<u>A Nutrition Education Workshop</u>	Free.
	<u>Pays Dividends</u>	

Orders for less than one dollar will not be accepted.

GREEN GIANT COMPANY; Le Sueur, Minnesota.

A pamphlet telling something of the products and the company is available. It contains considerable advertising.

A colored sound movie showing the growth of peas and corn by means of time - lapse photography may be ordered from Modern Talking Pictures, Incorporated; 112 East Ontario Street; Chicago.

Speakers may be arranged for local classrooms.

Guided tours may be arranged.

GEORGE A. HORMEL AND COMPANY; Austin, Minnesota.

A colored sound movie on meat production is available.

Guided tours may be arranged for classes from the sixth grade up.

INTERNATIONAL MILLING COMPANY; 800 McKnight Building; Minneapolis.

Wheat from Field to Mill, Wheat into Flour, and Flour from Mill to Market are three pamphlets in a series of training units for the company's general salesmen. They were written to give them a general understanding of the company's activities. Parts of these pamphlets have good information and could be used with junior high pupils. One set per teacher is all that can be provided.

The Story of International and The Organization of International are also training pamphlets. These give the story of International's development and company organization.

Reaching for Perfection is a pamphlet giving a brief story of the development of milling equipment. The text shows some bias in stating the superiority of International's milling equipment.

The Story of Bulk Flour Handling tells the story of the transportation of large quantities of flour to bakeries.

A colored sound movie on flour milling is available. For best comprehension it is suggested for high school classes.

Speakers may be arranged for local classrooms.

KRAFTS FOODS COMPANY; New Ulm, Minnesota.

The World of Cheese is a pamphlet describing the types of cheeses and the methods of producing them in the countries of their origin. It is written at a high school reading level. The stories of the origins of different types of cheeses would

be interesting to younger children if told by the teacher.

A wall chart and individual notebook size copies showing the nutritional value of a pound of cheese as compared to quarts of milk.

LAND-O-LAKES CREAMERIES; 2215 Kennedy Street Northeast; Minneapolis.

100,000 Neighbors is a pamphlet giving a brief story of the Land-O-Lakes Creameries and their production.

Guided tours may be arranged at the individual creameries for pupils twelve years old or older.

LIBBY, McNEILL AND LIBBY COMPANY; Rochester, Minnesota.

Today's Canned Foods is a pamphlet giving facts about commercial canning and specifications of can sizes. In the back of this pamphlet a number of recipes are given. Only one pamphlet to a teacher may be sent.

Leaflets of Kitchen Chatter are available to teachers. Each leaflet tells facts about a certain food and gives recipes for its use.

Small folders of recipes may be had in quantities for classrooms. These recipes all call for the use of the company's products.

Dummy can sets are available.

Guided tours are permitted through some of the plants.

The above materials should be ordered from Libby, McNeill

Libby Company; Department of Home Economics; Chicago.

MAPLE ISLAND INCORPORATED; Stillwater, Minnesota.

Maple Island Means Milk is a pamphlet telling the story of the plant and their processes in producing milk products.

Bread is a handbook for commercial bakers of bread.

Guided tours may be arranged for pupils eight years old and older.

MARIGOLD DAIRIES; 400 North Broadway; Rochester.

Milk and You is a pamphlet with facts about milk and its food value written for school children in the intermediate grades. The pamphlet is distributed to the children during plant tours.

Slides are shown at the plant during tours.

Samples of cartons may be had for exhibits.

Speakers may be arranged for local classrooms.

Guided tours may be arranged.

RALSTON PURINA COMPANY; 3815 Hiawatha Avenue; Minneapolis.

A sheet listing the educational materials on nutrition is available from the Ralston Purina Company; Checkerboard Square; Saint Louis 2, Missouri. These materials stress the use of whole grain products.

A black and white sound movie on dog chow suitable for junior high school pupils is available.

ROCHESTER BREAD COMPANY; Rochester, Minnesota.

Information of educational materials on bakery products may be got from the Consumer Service Department, American Institute of Baking; 20 North Wacker Drive; Chicago.

Dummy packages of bread can be had for a classroom exhibit.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for pupils in the second grade or above.

ROCHESTER DAIRY COOPERATIVE; 408 $\frac{1}{2}$  South Broadway; Rochester.

A black and white film strip and a black and white silent movie are available.

Speakers may be arranged for classrooms within eighty miles.

Guided tours through the plant may be arranged.

SACHS NUT AND SHELLING COMPANY; 248 First Avenue North; Minneapolis.

Displays of nuts may be had for ten days as exhibits.

Guided tours may be arranged for pupils twelve years old and older.

SCHULERS CHOCOLATES; 1000 West 5th Street; Winona.

Samples for pupils may be had.

A film on candy is available from the National Confectioners Association; 221 North La Salle Street; Chicago.

SWIFT AND COMPANY; South Saint Paul, Minnesota.

The company has educational materials available, but none were sent for the writer's listing.

A black and white and a colored film strip about meat products are available.

A black and white silent movie, a black and white sound movie and a colored sound movie on meat products are available. They are recommended for those eight years old and older.

Speakers may be arranged for local classrooms.

Guided tours for high school students may be arranged.

TAYSTEE DIVISION OF THE AMERICAN BAKERIES COMPANY; 2336 West Superior Street; Duluth.

The Story of Making Bread is a pamphlet describing the processes in commercial bakeries. It contains some advertising in the text.

Dummy loaves of bread may be had for exhibits.

Guided tours through the plant may be arranged.

TWIN CITY MILK PRODUCERS ASSOCIATION; 2424 Territorial Road; Saint Paul.

Educational materials may be got from the Dairy Council of the Twin Cities. No material was sent for the writer's listing.

J. R. WATKINS COMPANY; Winona, Minnesota.

A chart showing pictures of various spices and giving a few facts about them is available. This chart is not suited for use

on bulletin boards because the black and white pictures and printing are very small.

WILSON AND COMPANY; Albert Lea, Minnesota.

Large wall charts showing the cuts of meat from a cow, a hog, and a lamb are available. These would be suitable to use in home economics classes.

Speakers may be arranged for classrooms within fifty miles.

Guided tours may be arranged for pupils ten years old or older.

ZINSMASER BREAD COMPANY; 2831 West Superior Street; Duluth.

Home of Master Bread is a pamphlet giving a brief story of the Zinsmaster Company and the processes used in their bakeries. It is illustrated with small pictures of the processes.

How Much Do You Know About Bread? is a pamphlet giving facts about bread. The reading level is that of junior high school pupils.

#### 5). Machinery, Parts and Other Metal Products

ACROMETAL PRODUCTS INCORPORATED; 616 Fifth Street North; Minneapolis.

Advertising leaflets containing pictures of industrial bobbins, shuttles and spools are available.

AMERICAN HOIST AND DERRICK COMPANY; Saint Paul, Minnesota

Glossy eight by ten photographs of the company's products

are available.

Models or displays may be borrowed for exhibits for five weeks.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for older pupils.

ARMCO DRAINAGE AND METAL PRODUCTS; Minneapolis, Minnesota

Pamphlets on highway drainage needs are available for engineering students. The material is very technical.

AUTOMATIC CONTROL COMPANY; 995 University Avenue; Saint Paul.

A catalog of automatic pump controls is available. The diagrams and pictures are technical.

BROM MACHINE AND FOUNDRY COMPANY; Winona, Minnesota.

Engineering Properties and Applications of Ni-Hard is a technical pamphlet describing the processes of manufacturing Ni-Hard and explaining its uses.

Speakers may be arranged for classrooms within fifty miles.

Guided tours may be arranged.

CARLETON SCREW PRODUCTS COMPANY; 2424 Hiawatha Avenue; Minneapolis.

A black and white sound movie on the company's products is available. It may be used with high school pupils.

Speakers may be arranged for classrooms within a hundred and fifty miles.

Guided tours may be arranged for high school students.

CENTRAL RESEARCH LABORATORIES INCORPORATED; Red Wing, Minnesota.

Technical materials on master-slave manipulators are available. Pictures of these automatic manipulators and hands are contained in the materials.

Speakers may be arranged for local classrooms.

CHAR-LYNN COMPANY; 2843 Twenty-sixth Avenue South; Minneapolis.

A catalog of hydraulic equipment is available.

A colored sound movie on hydraulic equipment may be borrowed for use with high school pupils.

CONTINENTAL MACHINES INCORPORATED; Savage, Minnesota.

Power Sawing Hand Book is a book explaining the use of power saws. This book would be suitable for a reference volume in manual training classes using these machines. A comparison in favor of the company's machines is made. The list price is one dollar, but some copies may be obtained free for classroom use.

Do All Band Tool Manual is a book to use as a reference in manual arts classes using such tools. The information and instructions are of a technical nature. The list price is two dollars, but some copies for school use may be obtained free.

The Science of Precision Measurement is a book on technical

precision measuring. It is highly technical but might be used as a reference work in advance vocational or manual arts classes. The price is three dollars and fifty cents.

Civilization Through Tools is a pamphlet describing and illustrating the development of man's use of tools. The many illustrations which make this work valuable are pictures of the actual artifacts from some of America's leading museums. The text is written on the junior high school level. The information and pictures could be used by any class studying ancient times. One copy per teacher is available.

How Basic Tools Created Civilization is a three foot by four foot wall chart showing the development of types of tools from the stone ages until today. The pictures of the tools are reproductions of actual artifacts and tools in some of America's leading museums.

A smaller chart similar to the one above with most of the information but smaller pictures is also available.

A colored sound movie on the use of the company's machines is available for manual training classes.

Speakers may be arranged for local classrooms.

Guided tours of the firm may be arranged for high school students and certain junior high school classes.

O'NEIL-IRWIN MANUFACTURING COMPANY; Lake City, Minnesota.

Advertising materials containing pictures of the different

types of metal working machines are available.

A pamphlet on bending iron by machines is available.

Directions of projects in metal working classes are available. The three folders of projects are Suggestions in Wrought Iron for the Modern Home, Contemporary Sheet Metal Projects and Projects in General Metalworking. Single copies of these folders may be had free. In large quantities they cost fifty cents each.

A black and white sound movie is available for metal working classes.

DONALDSON COMPANY, INCORPORATED; 666 Pelham Boulevard; Saint Paul.

A pamphlet on the company is available. It is written in a difficult style.

A catalog of farm equipment and road work machinery is available. It contains small pictures of the machines and technical information about them.

A wall chart showing some of the company's products is available. The information is technical and the pictures are very small.

A black and white film strip on the products of the company is available for advanced high school classes.

Speakers may be arranged for classrooms in Minnesota.

FAIRMONT RAILWAY MOTORS INCORPORATED; Fairmont, Minnesota

A catalog of railroad maintenance equipment is available.

Guided tours of the company may be arranged.

FORD MOTOR COMPANY; 966 Mississippi River Boulevard; Saint Paul

Educational materials are available, but none were sent for the writer's listing.

A Car is Born is a pamphlet telling the story of automobile production. The pamphlet is suitable for junior high school pupils with colored pictures illustrating some of the processes.

Models or displays are available for classroom exhibits.

Motion Pictures from Ford Motor Company is a catalog of available films. It contains films on educational subjects, American life, the automobile industry and vacation spots in America.

Speakers may be arranged for classrooms in most localities.

Guided tours of groups not over fifty persons may be arranged.

The above materials should be ordered from Mr. Hugh Ralston, Educational Affairs Department; Ford Motor Company; 10611 Haggerty Road; Dearborn, Michigan.

GRAY COMPANY INCORPORATED; 60 Eleventh Avenue Northeast; Minneapolis.

A catalog of lubricating and paint spraying equipment is available. It contains illustrations of various types of equipment.

Guided Tours may be arranged for high school age students.

E. F. JOHNSON COMPANY; Waseca, Minnesota.

Guided tours of the plant which produces electronic equipment may be arranged for high school students.

EDWARD E. JOHNSON; 315 North Pierce Street; Saint Paul.

A catalog of types of well-screens is available. Cross-section diagrams of some wells are shown.

MARQUETTE MANUFACTURING COMPANY; 307 East Hennepin Avenue; Minneapolis.

A catalog of various types of welding equipment is available.

A colored sound movie is available for use in high school manual training classes.

Guided tours may be arranged for high school students.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY; Minneapolis.

The Aquastat Story is a pamphlet containing pictures of various types of Aquastats and technical information concerning them.

Your Curve of Opportunity in Automatic Control is a pamphlet giving vocational information about jobs in the company.

A list of films and film strips on electrical subjects, thermostats, and one on the Minneapolis Lakers Basketball Team is available.

MINNESOTA AUTOMOTIVE INCORPORATED; 1101 North Front Street;  
Mankato.

Advertising leaflets containing technical information on  
brakes are available.

NORTHFIELD IRON COMPANY; Post Office Box 30; Northfield.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for pupils in junior and  
senior high schools.

O. W. ONAN AND SONS INCORPORATED; Minneapolis 14, Minnesota

Advertising materials and catalogs showing various types of  
electric plants are available.

A black and white sound movie is available.

Alaskan Adventure is a colored sound movie of an Alaskan  
travelog. Some of the pictures were taken by light produced by  
an Onan electric plant and advertising in this way is contained  
in the film.

Guided tours may be arranged for pupils ten years old and older.

Saint Paul Foundry and Manufacturing Company; 500 Como Avenue ;  
Saint Paul.

A foundry handbook for the company is available. It is very  
technical but might be used as a teacher's reference.

Speakers for manual arts classes may be arranged for in the

state of Minnesota.

Guided tours may be arranged for senior high school students.

SCOTT-ATWATER MANUFACTURING COMPANY, INCORPORATED; 2901 East Hennepin Avenue; Minneapolis.

An old model cut-a-way motor for instruction on internal combustion may be had on loan for a limited time.

A colored sound movie on motors and their use is available.

Guided tours may be arranged.

TEL-E-LECT PRODUCTS INCORPORATED; 10001 Minnetonka Boulevard; Minneapolis.

Advertising materials with pictures of truck mounted equipment such as derricks, drills, etc are available.

TORIT MANUFACTURING COMPANY; Walnut and Exchange Streets; Saint Paul.

Catalogs showing various types of dust collectors and dental equipment are available.

WHIRLPOOL-SEEGAR; 850 Arcade Street; Saint Paul.

A pamphlet on the engineering opportunities with the company written for the recruitment of personnel is available.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for high school students.

JOHN WOOD COMPANY; 509 Front Avenue; Saint Paul.

A catalog of products showing pictures of milk cans and welded wire products is available.

Guided tours may be arranged.

#### 6). Mining

PICKAND MATHERS AND COMPANY; 300 Sellwood Building; Duluth.

Men and Iron is a unit on iron and steel prepared by teachers for use in elementary classes. The unit contains the story of iron and steel suggestions for activities and a list of other materials available. Classroom quantities of this booklet may be had from the American Iron and Steel Institute; 350 Fifth Avenue; New York.

Facts about Minnesota Iron Mining is a pamphlet describing the iron deposits and mining developments in Minnesota. The reading is difficult for elementary grades but some of the information may be usable. It is most suitable for use with junior high pupils.

Teamwork on Taconite is a pamphlet giving the story of the development of taconite processing for commercial use. It is illustrated with pictures and detailed diagrams of the taconite plant near Aurora. This pamphlet is suitable for use with junior high pupils.

Mines and Men is a pamphlet describing the trends and future

possibilities in Minnesota mining. The illustrations would be of most value in a classroom.

The above materials should be ordered from the Iron Mining Industry of Minnesota; 408 Sellwood Building; Duluth.

Ore samples may be had for classroom exhibits.

Two films America's Iron Frontier and Iron Ore Unlimited, which tells of the taconite development, are available.

Speakers may be arranged for in classrooms of the iron ore mining and shipping area.

Guided tours may be arranged for high school pupils.

REPUBLIC STEEL CORPORATION; Duluth, Minnesota.

Steel is a comic type booklet telling the story of steel making as seen by a father and son visiting the plant. It is available for pupils from fifth through eighth grades.

Basic Raw Materials of the Steel Industry is a kit of bottled samples of the materials used in making steel. A small booklet containing facts about deposits and use of these materials is enclosed with the kit.

Motion Pictures is a listing of films presented by Republic Steel.

The above materials should be ordered from the Republic Steel Corporation, Department of Public Relations; Republic Building; Cleveland.

Men Who Make Steel is a twenty-eight minute color film on the

production of steel. It should be ordered from Modern Talking Picture Service; 45 Rockefeller Plaza; New York.

RESERVE MINING COMPANY; 300 Christie Building; Duluth.

Minnesota's Magic Rock is a comic type booklet telling of the open pit and under ground mining in Minnesota and the processing of the taconite for commercial use as a mining engineer shows them to visitors. The booklet is appealing and suitable for pupils in the upper elementary grades and junior high school.

Your Visit to Reserve is a pamphlet telling the story of the taconite development and process. It is suitable for use with junior high school pupils.

Samples of taconite rock and finished pellets are available for exhibits.

Taconite a film telling the story of taconite is available from the Elliott Film Company; 1112 Nicollet Avenue; Minneapolis.

UNITED STATES STEEL CORPORATION AND THE OLIVER MINING COMPANY; Wolvin Building; Duluth.

Welcome to the Minnesota Iron Ore Country is a pamphlet designed to give tourists information about Minnesota's iron ore mining and shipping. The information and facts are suitable for classroom use.

Minnesota's Magic Rock is a comic type booklet telling of open pit and underground mining and the processing of taconite

for commercial use as was shown by a mining engineer to visitors.

Mines and Men is a pamphlet describing the trends and future possibilities in Minnesota mining. The illustrations would be most valuable in lower grade classrooms. High school classes studying economic problems and developments could use the material well.

This is Pilotac is a pamphlet describing the processes of taconite processing in an experimental plant. Advanced elementary and junior high school pupils could read this material.

Great Lakes Shipping is a pamphlet telling the story of shipping on the great lakes which is so important to Minnesota's mining industry. The lakes and channels, the docks and loading facilities, and the fleet and its crews' life are described. The pamphlet is well illustrated and could be used by advanced elementary and junior high school pupils.

Steel Making at Duluth is a pamphlet describing the production of steel at the Duluth plant. It is well illustrated and would be valuable to use before a tour of the plant.

Steel Making in America is a magazine sized pamphlet telling the history of steel and the story of manufacturing it. This pamphlet gives an excellent complete story of steel manufacturing and is well illustrated. The reading level is that of junior high school or above.

Samples of iron ore may be had for classroom exhibits.

A colored film strip, a black and white sound movie and a colored sound movie on iron mining and steel production are available.

Guided tours may be arranged for secondary school students.

#### 7). Miscellaneous

ALUMA CRAFT BOAT COMPANY; 2633 Twenty-seventh Avenue South;  
Minneapolis.

An advertising pamphlet showing the types of small craft made by the company is available.

A black and white sound movie and a colored sound movie are available.

Calendars with pictures of boats are available. The numbers are too small for use as a classroom calendar.

LARSON BOAT WORKS; Little Falls, Minnesota.

A catalog containing pictures of the various styles of small craft and their specifications is available.

MINNETONKA BOAT WORKS; Wazzata, Minnesota.

An advertising pamphlet containing pictures of various styles of small craft is available.

BACH MUSIC COMPANY; 315 South Broadway; Rochester.

Speakers may be arranged for local classrooms.

Guided tours through the firm which is chiefly engaged in

retailing music and instruments may be arranged.

WENGER MUSIC EQUIPMENT COMPANY; Owatonna, Minnesota.

Models may be had for inspection purposes for thirty days.

Speakers may be arranged for classrooms within three hundred miles.

Guided tours may be arranged.

BEMIS BROTHERS BAG COMPANY; 604 Fourth Street South; Minneapolis.

Catalogs showing various types of bags, tents and sleeping bags the company makes are available.

Samples of bags may be had for exhibits.

The King's Other Life is a film on cotton and its use in bags and packaging.

A colored film strip, a black and white sound movie, and a colored sound movie on types of bags and uses of packaging is available. The school must pay parcel post and insurance one-way.

Guided tours may be arranged for pupils ten years old or older.

N. P. BENSON OPTICAL COMPANY; Medical Arts Building; Minneapolis.

A colored sound movie on the product is available. It is suggested for senior high school students.

Speakers may be arranged for in any area where a branch of the company is established.

Guided tours may be arranged for junior and senior high school students.

BINTLIFF MANUFACTURING COMPANY; 728 Central Avenue; Minneapolis.

A movie on the silk screen process and industry is available.

BLANDIN PAPER COMPANY; Grand Rapids, Minnesota.

Speakers may be arranged for local classrooms from both the Grand Rapids and Saint Paul plants.

Guided tours may be arranged for pupils age nine or older.

MINNESOTA AND ONTARIO PAPER COMPANY; 500 Investors Building; Minneapolis.

Trees are a Crop is a pamphlet suggesting methods of tree conservation to be taken by land owners.

The Story of Newsprint Paper is a printed paper stapled together telling briefly of paper in ancient times and the methods of paper production today. The material is valuable, but the form is not durable. The reading level is that of junior high school and above.

The Mandonian for September and October 1950 gives a picture story of the company's development over forty years. Some copies of this issue of the magazine are available.

How Mando Uses the Forest Harvest is a pamphlet telling of the use the company makes of the trees they harvest. The pamphlet is illustrated with pictures of many of the processes. The reading level is that of junior high school pupils or above.

Glossy 8 X 10 photographs of scenes from the plant at Inter-

national Falls are available.

School Bibliography 1955-56 and Bibliography of Forest Industry Educational Materials are available from the American Forest Product Industries, Incorporated; 1816 N. Street Northwest; Washington 6, D. C.

NORTHWEST PAPER COMPANY; Cloquet, Minnesota.

Pulp and Paper Making Information is a mimeographed paper stapled together giving facts about the production of paper at the Cloquet plant. It is useful as reference material.

The Manufacture of Paper is a booklet describing the processes in paper production. The reading is difficult for school children except on the high school level. The booklet contains illustrations of most of the processes.

A Guide to Career Opportunities in the Paper Industry is a pamphlet telling of the wide variety of careers found in the paper industry and the requirements, duties and advancement opportunities in this industry. This pamphlet would be of interest to those in classes studying vocations.

A colored film strip on paper making is available.

Speakers may be arranged for local classrooms on special occasions.

Guided tours may be arranged for junior and senior high school classes.

BROWN AND BIGELOW, INCORPORATED; 1286 University Avenue; Saint Paul.

Extra pictures from calendars may be sent if there are some available on the subject requested.

LOUIS F. DOW COMPANY; University at Hampden Avenue; Saint Paul.

Assorted pictures for bulletin boards may be had. There is no choice of subjects or sizes.

CITIES SERVICE OIL COMPANY; 500 Robert Street; Saint Paul.

The Story of Oil is a pamphlet giving briefly the story of how oil was formed, first discovered and used and how it is produced today. The pamphlet is written on a junior high school level.

Oil Serves You is a pamphlet telling very briefly the steps in the process of getting oil from the ground to the consumer. The main value of the pamphlet is the facts and figures about oil production and the number of persons employed in various types of positions in the oil industry.

Facts About Oil is a pamphlet giving an overview of all aspects the oil production and industry. It is written more as a resource material for facts than as a story. Junior high school pupils would be able to use it as a supplementary source in their study.

The Oil Industry Teaching Aid Materials is a listing of

educational aids such as units on oil prepared for six different classes, pamphlets, charts, films and other materials.

These aids are graded for junior and senior high school classes.

Movies About Oil is a catalog of movies pertaining to various aspects of the oil industry.

Program on Oil is a booklet of various programs on oil for many groups. Some of the programs are speakers, films and one man shows. There is no charge for these films and programs.

CONTINENTAL CAN COMPANY, INCORPORATED; 810 Roanoke Building.  
Minneapolis.

Study units about the contributions packaging has made to modern civilization are available. A teacher's guide covering all units, a pupils booklet and charts are included in each unit. There is no student booklet for the junior high school unit. The teacher's guide covers source materials for this age group.

All Around Me is the lower elementary pupils booklet. The unit is a study part packaging plays in his life at home, in school and in the community.

Let's Go Exploring is the booklet for upper elementary pupils. It leads the pupils to explore packaging in the fields of food, health and safety, industry and the future.

My Community Album is the booklet for senior high school pupils. It seeks to aid the pupils in using their community as

a learning laboratory.

The Story of Packaging is a colored sound movie recommended to be used with these units.

Man of Action is a colored sound movie about community action being taken to prevent a neighborhood from becoming run-down through inadequate housing.

DAHLBERG COMPANY; Golden Valley; Minneapolis.

Learning to Hear Again is a small booklet giving directions for the use of a hearing aid in various situations. They are available for parents of hard of hearing children.

A colored film strip for use with parents of hard of hearing children is available. The cost has not been definitely set.

Guided tours of the company may be arranged.

DESPATCH OVEN COMPANY; 619 Southeast Eighth Street; Minneapolis.

Catalogs containing pictures of industrial ovens and furnaces are available.

DIAMOND MATCH COMPANY; Cloquet, Minnesota.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for pupils twelve years old or older.

FEDERAL CARTRIDGE CORPORATION; Foshay Tower; Minneapolis.

A Primer on Conservation is a book intended to teach the

various conservation of all natural resources. It is suitable for use with senior high school students. It costs fifty cents in paper bound editions.

A Guide to Better Conservation is a pamphlet written for 4-H Club members. The pamphlet explains the need for conservation and various conservation projects which are possible. Junior and senior high school pupils particularly in rural areas will find valuable information in the pamphlet.

A book of small black and white conservation posters are available.

GENERAL OUTDOOR ADVERTISING COMPANY; 2020 Washington Avenue South; Minneapolis.

A colored sound movie on advertising is available for high school age students.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for high school students.

GLENWOOD-INGLEWOOD COMPANY; Glenwood Avenue at Thomas; Minneapolis.

Water Facts is a small booklet giving facts and chemical content of spring water. Most of the booklet is advertising.

Some Facts about Fluoride Spring Water is a small booklet giving some facts in favor of fluoridation.

Speakers may be arranged for local classrooms.

Guided tours may be arranged.

HALVORSON TREES INCORPORATED; 390 Lake Avenue South; Duluth.

Some reprints of factual magazine articles are available. They are written on the junior and senior high school level. Photographs are available of trees and processes. A colored sound movie on trees and their processing is available.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for pupils ten years or older.

IWEN BOX AND LUMBER COMPANY; Pine Island, Minnesota.

Advertising leaflets showing pictures of types of crates and boxes are available.

Samples may be had for exhibits by local schools for one month.

Speakers may be arranged for classrooms within fifty miles.

Guided tours may be arranged.

LINDE AIR PRODUCTS DIVISION OF UNION CARBIDE AND CARBON CORPORATION; Minneapolis.

A catalog of products of the corporation is available.

This is very technical information.

Pamphlets on the use of oxygen for welding and medical uses are available. These pamphlets are technical.

Preventing Welding and Cutting Fires is a pamphlet describing safety measures while using oxygen for metal work.

Oxygen its Medical Uses is a folder telling some of the ways

oxygen is used in fighting disease and illness.

Films on Oxygen Therapy is a folder listing films on the medical uses of oxygen available to groups of nurses and doctors.

MILLERBERND MANUFACTURING COMPANY; Winsted, Minnesota.

Advertising material containing pictures of various types of outdoor lighting equipment is available.

NORTHLAND SKI MANUFACTURING COMPANY; 2325 Endicott Street; Saint Paul.

The Northland Ski Manual is a manual on skiing fundamentals and techniques. Only one copy per teacher is available.

Northland Skis is a catalog showing types of skis and equipment available.

PAKO CORPORATION; 1010 Lyndale Avenue North; Minneapolis.

Catalogs and technical information of developing of films and x-rays are available.

Speakers may be arranged for classes in photography or camera clubs within one hundred miles.

Guided tours may be arranged for pupils in junior and senior high school.

PARK REGION TIMBER COMPANY; 1602 Mill Avenue Northeast; Brainerd.

Speakers may be arranged for classrooms within a hundred and fifty miles.

RAUSCH BROTHERS GRANITE COMPANY; Ortonville, Minnesota.

Guided tours may be arranged for pupils ten years old or older.

RAYETTE INCORPORATED; 261 East Fifth; Saint Paul.

Vicky Scott is a film available from beauty schools on the vocation and training of beauticians.

RED WING POTTERIES INCORPORATED; Red Wing, Minnesota.

Advertising leaflets showing styles and patterns of pottery are available.

A booklet containing a short history of the Red Wing Potteries and general information on pottery is available.

Speakers may be arranged for local classrooms.

Guided tours may be arranged for junior and senior high school classes.

ROWELL LABORATORIES INCORPORATED; Baudette, Minnesota.

A pamphlet telling of the discovery and manufacturing of burbot liver oil is available.

SMEAD MANUFACTURING COMPANY; 309 Second Street; Hastings.

Filing Simplified is a manual for business filing systems with a teacher's guide. This material is available to business education teachers only.

Posters on various types of filing and containers are

available. These advertise the types made by the company.

GEORGE E. THOMPSON COMPANY; 616 Forty-first Avenue North;  
Minneapolis.

Stop Lightning Losses is a pamphlet describing how lightning strikes and damages buildings and methods of protection.

Advertising is prominent and the information is written to inspire fear. It is written on the junior high level.

Nature's Artillery is a pamphlet describing the origin and characteristics of lightning.

Diagrams of electrified clouds and ground fields are shown. This material is more scientifically presented and the scare element is minimized. It is written on a upper junior high and senior high school level. This pamphlet is available from The National Board of Fire Underwriters; 85 John Street; New York.

Lightning---its Behavior and What to Do About It is a pamphlet telling the characteristics of lightning, why it strikes certain subjects, and how protection may be had. The pamphlet is a scientific approach to the study of lightning suitable for senior high school classes

WINKLEY COMPANY; 1330 Washington Avenue; Minneapolis.

Winkley Artificial Limbs is a pamphlet giving information on styles of artificial limbs and their use. This pamphlet is

written for advertising purposes.

Looking Ahead is a pamphlet written for adult amputees. It is written to encourage them and explain types of artificial limbs and training.

A Guide for Arm Amputees is a pamphlet published by the Veterans Administration containing diagrams of the exercises and training to be followed in training an amputee to perform daily activities of life.

Handbook for the Leg Amputee is a pamphlet published by the Veterans Administration containing diagrams of exercises and training to be followed in learning to walk with an artificial limb.

Speakers may be arranged for special classes or groups of parents of handicapped children.

Guided tours may be arranged.

UNIVERSAL ATLAS CEMENT COMPANY; 2402 Commonwealth Avenue; Duluth.

The Cement Story is a pamphlet telling the history, the story of cement production and its use in building our nation as we know it. The pamphlet is written for secondary schools.

The Drama of Cement Making is a pamphlet describing the production of cement in a modern factory. It is written on the secondary school level and illustrated with scenes from the factory.

ZENITH CONCRETE PRODUCTS COMPANY; Waterfront at Fourteenth Avenue  
West; Duluth.

A booklet on the manufacture operation is available. It is suggested by the company that it be used before a tour of the plant is taken. Several copies will be sent to the classroom. This booklet was not published at the time this paper was written, but will be available by September 1956.

Guided tours may be arranged for high school classes.

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

#### I. SUMMARY

The current interest in school and community cooperation suggested that a survey of all the educational resources available in a limited area might be valuable information for teachers of that area. However, the scope of such a project was beyond the ability and means of the writer. Therefore, a survey was made of the educational resources available from the manufacturing and mining companies of Minnesota.

Of the 1436 cases in the study 212 firms returned an answer. No materials or resources were available from 55 of the answering firms. It was found that the larger firms answered more frequently and sent more usable material than did the smaller firms. Most of the firms answering had usable resources available.

The resources available from Minnesota manufacturers were divided into seven topics for the convenience of those who will use the listing. These topics were: (1) building materials; (2) clothing; (3) farm appliances and needs; (4) food; (5) machinery, parts and other metal products; (6) mining; and (7) miscellaneous. When possible the listing was annotated with the type of aid, grade level and content.

## II. CONCLUSIONS AND SUGGESTIONS FOR FURTHER STUDY

From this study the following conclusions may be drawn:

(1) That the larger the firm the more likely it was to have educational materials available. Many of the small firms offered valuable resources to local schools in the form of guided tours and speakers. (2) That the materials available were often of too advanced a reading level or are too technical for school use. A few firms hired educational personnel to grade the materials produced, but most firms did not have such services.

The manufacturers in Minnesota are not the only producers of educational aids in the state. Merchants and commercial firms, firms of communication and transportation facilities, government and civic agencies, and others produce a wealth of material which should be explored and the information made available to the classroom teachers.

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APPENDIX

2511 West First Street  
Duluth 6, Minnesota

Dear Sir:

In more recent years educators have become aware that in our society today teaching of textbook material alone does not adequately prepare pupils for life. They have sought to find more up-to-date and enrichment materials from many sources. It is the purpose of my paper for the Master's degree to make available to teachers a list of free and inexpensive materials and resources which Minnesota manufacturers can supply. As I am a graduate student of the University of Minnesota, Duluth Branch, this paper will be placed in the curriculum library of the University of Minnesota, Duluth Branch, for the use of teachers in training.

These materials and resources would be of several different types:

1. Printed educational material on the product or process of manufacturing the product.
2. Advertising materials giving facts and information about the products.
3. Pictures used in advertising articles such as calendars showing the product or manufacturing process, historical scenes or scenes of specific cities or areas of the country.
4. Samples or displays of the product.
5. Films or film strips.
6. Speakers from the company made available to classrooms.
7. Guided tours through the company.
8. Other types of material you feel could be used in giving pupils a better understanding of your product and industry.

Enclosed is a form where you may check the type of materials your company would be able to supply. I should like to receive a sample of these materials so that in my list for teacher's use I may give grade levels at which they could be used most effectively. As these materials change from time to time the curriculum library would be interested in receiving the new materials to keep this list up to date. I thank you for your cooperation in making this list available to teachers and for the material you send me.

Very truly yours,

## MATERIALS AVAILABLE

Check the proper blanks

Does your company have printed educational materials giving information or facts about your product or process of manufacturing which you would supply free or at low cost on request?

YES \_\_\_\_\_ NO \_\_\_\_\_ COST \_\_\_\_\_

Does your company have advertising materials giving information or facts about your product or process of manufacturing which you would supply on request to teachers?

YES \_\_\_\_\_ NO \_\_\_\_\_ COST \_\_\_\_\_

Does your company have pictures, graphs, maps or other visual materials which could be used in school classes?

YES \_\_\_\_\_ NO \_\_\_\_\_ COST \_\_\_\_\_

Would your company be willing to supply enough copies of the above types of materials for each pupil in the class to have his own copy?

YES: \_\_\_\_\_ One copy for the teacher only \_\_\_\_\_

Are you sending me copies of the materials checked above for my listing?

YES \_\_\_\_\_ NO \_\_\_\_\_

Does your company have samples, models or displays of your product  
which you would send to the school for possession?

YES \_\_\_\_\_ NO \_\_\_\_\_

Does your company have samples, models or displays of your product  
which you would be willing to loan to a school?

YES \_\_\_\_\_ NO \_\_\_\_\_

How long would you permit a school to keep the loaned display? \_\_\_\_\_

Are film or film strips about your product available from your  
company?

YES \_\_\_\_\_ NO \_\_\_\_\_ RENTAL COST \_\_\_\_\_

Of what type are they?

Black & white film strip \_\_\_\_\_ Black & white sound movie \_\_\_\_\_

Colored film strip \_\_\_\_\_ Colored silent movie \_\_\_\_\_

Black & white silent movie \_\_\_\_\_ Colored sound movie \_\_\_\_\_

With what age group do you suggest they be used? Minimum \_\_\_\_\_

Maximum \_\_\_\_\_

Would you make available a speaker to tell of your company and product  
in local classroom?

YES \_\_\_\_\_ NO \_\_\_\_\_

Could such a speaker be made available to schools in other areas?

YES \_\_\_\_\_ NO \_\_\_\_\_

Maximum distance allowed \_\_\_\_\_ Cost to school \_\_\_\_\_

Do you conduct guided tours of your company for school classes?

YESS \_\_\_\_\_ NO \_\_\_\_\_

Limitations of group size \_\_\_\_\_ Age restrictions \_\_\_\_\_

Please list other materials or resources you may have.