THE BUREAU OF GEOGRAPHY OF THE CHICAGO PUBLIC SCHOOLS.

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Within the last few years much use has been made of illustrative material in the teaching of Geography. This has led to the collection of books, pictures, lantern slides, specimens of products of different countries, natural or manufactured, and to their arrangement into suitable and convenient form for use in schools. Chicago was one of the first cities to make such a systematic collection and to organize it in such wise that it could be drawn upon as needed by the various schools of the city.

This collection or museum is known as the Bureau of Geography and is now established in the new building of the Chicago Normal School. The bureau has become known outside the city in various ways, principally through a visit made to the Normal School last November by the Earth Science section of the Central Association of Science and Mathematics Teachers, at which time the rooms of the Bureau of Geography were opened for inspection.

Since this visit many letters of inquiry as to the management of this bureau have been addressed to the writer. To answer these letters in detail was impossible. The following account is therefore written in answer to these letters of inquiry as well as in the way of suggestion to teachers of geography.

The Bureau of Geography was organized by forty-four principals of the elementary schools of Chicago on May 25, 1901. This organization was due in large measure to the efforts of Mr. Richard Waterman. Each principal contributed the sum of ten dollars and many business firms in the city and elsewhere were asked to make contributions of material suitable for geographic illustration. Much of this material was given free of charge and a part of the money contributed by the principals was used to buy the proper cases in which the exhibits might be safely shipped to different parts of the city.

Finding after a time that the work of administering the Bureau was very heavy, the principals decided to give the collection into the keeping of the Board of Education, which assumed the management October 28, 1903. The following month the Bureau of

Geography was transferred to the Chicago Normal School where it is under the direction of the Department of Geography.

The work of carrying on the Bureau is in the hands of a salaried curator appointed by the School Board. It is his duty to send out supplies on the written requisition of the principals of the elementary schools, to verify the contents of the boxes on their return, to collect material, to arrange such material in sets, to select from whatever sources he may suitable descriptive printed matter and pictures to illustrate these sets, and with the approval of the Geography Department to expend such sums as may be voted by the Board of Education for the maintenance of the Bureau.

Each collection sent out from the Normal School is packed in three or more stout pasteboard boxes, made for the purpose. The set of boxes is shipped in a strong wooden packing case. One of these smaller boxes contains pictures, the second holds selected magazine articles bearing on the subject or typewritten descriptions of the materials, and the third box, divided into compartments by pasteboard partitions, contains bottles showing specimens of the product studied in the different stages of its manufacture or preparation.

These collections may represent:

- (1) A country as a whole.
- (2) A part of a country.
- (3) One product of a country.

(1) In the case illustrating South America the boxes contain samples of as many products of that country as could be obtained, e. g., rubber, coffee, etc. The literature and pictures were chosen to give as true an idea of South America as possible. Again the collection may represent (2) a part of the country, as for example, Argentina. The boxes contain typical products of Argentina and the pictures chosen are such as to illustrate the typical industries and characteristic physical features of that state. Still again the boxes may illustrate (3) one product of a country, as for instance wheat. In this case the sample boxes contain specimens of different kinds of wheat as well as samples of the various stages in the preparation which the wheat berry undergoes in the process of flour making. The pictures and printed matter illustrate the various processes of flour manufacture, as well as showing the methods of wheat raising and harvesting which obtain in America, Argentina, Russia, or any other wheat growing country.

Following is a duplicate of the blank order slip used by the principals in getting their supplies from the Bureau of Geography. The numbers placed after each product indicates the number of duplicate sets:

Requisition Blank.

To the Curator,

Bureau of Geography,
Chicago Normal School.

Date.....

Please book for the.....School
the collections indicated below.

.....Principal.....

Date

List of Collections.

FOOD PRODUCTS OF VEGETABLE ORIGIN.

Wheat (15)
Corn (12)
Rice (10)
Other Cereals (6)
Cocoanut (5)
Spices (4)
Coffee (8)
Tea (7)
Cocoa (5)
Sugar (10)

FOOD PRODUCTS OF ANIMAL ORIGIN.

Live Stock and Provisions (3)

RAW MATERIALS OF VEGETABLE ORIGIN.

Cotton (8)
Flax (7)
Hemp (2)
Ramie (1)
Manila Hemp (4)
Sisal Hemp (2)
Pine Needle (2)

RAW MATERIALS OF ANIMAL ORIGIN.

Wool (11)
Silk (10)
Mohair (3)
Sponge (3)
By-products of the packing houses (3)

MINERAL PRODUCTS.

Gold and Silver (7)
Lead (4)
Zinc (4)
Copper (5)
Asbestos (7)
Iron (5)
Coal (5)
Salt (7)
Petroleum (5)
Graphite (4)
Aluminum (3)

GEOGRAPHICAL COLLECTIONS

Alaska (5)
Hawaii (4)
Philippines (6)
Cuba (5)
Porto Rico (4)
Argentina (4)
Egypt (3)
Japan (6)
New Zealand (3)
Haiti (4)
Italy (4)
India (3)
Mexico (5)
Spain (2)

PRODUCTS OF THE FOREST.

Cork (7)
Wood (9)
Yellow Pine (1)

PRODUCTS OF MANUFACTURE.

Leather (9)

SOCIAL RELATIONS.

Transportation (6)

MISCELLANEOUS.

Rubber (7)
Fruit (3)
Nuts (3)
Paper (4)
Rattan (1)
Jute (1)
Asphalt (4)
Gypsum (4)
Building Stone (4)

Numbers in parenthesis show the number of sets available.

Suggestions for Ordering Collections.

Principal. Please detach suggestions for ordering collections before returning requisition.

These collections are sent to each public school free of charge, if ordered by the principal.

In ordering, place before the name of each collection desired, the number of the school week in which you wish to have it delivered at your school.

The collections called for will be booked in advance as nearly as possible in order indicated, orders being filled only on alternating weeks, to allow a school to use one collection for two consecutive weeks, as requested by a number of principals.

Requisitions will be booked and filled according to the order of their receipt, and a list of the collections as booked will be returned to you.

Any school showing a tendency to be irregular in the return of the collection or returning the same deficient or in a damaged condition, will be deprived of the use of material.

In order that the system of classifying and arranging the sets of this bureau be made plain to those who are making collections of geographic materials the silk set is chosen for illustration and will be described in detail.

Box A holds the bottles containing the perishable part of the exhibit. The box is divided into compartments and into each is fitted snugly a wide mouthed glass bottle. Each bottle 4 inches high and $1\frac{3}{4}$ inches in diameter, is marked with the number of the set and the number of the bottle. The silk sets, of which there are ten, number from 223 to 233. Of set 223 the bottles are marked 223:1, 223:2, etc. The contents of the bottles are best shown by the index or catalogue which accompanies each set.

Catalogue of Silk Collection 223.

- 223:1. Eggs of the silkworm moth on mulberry leaves.
- 223:2. Silkworm 10 days old.
- 223:3. Silkworm 20 days old.
- 223:4. Silkworm 30 days old.
- 223:5. Chrysalis of the silkworm.
- 223:6. Silkworm moth.
- 223:7. Cocoon pierced by the escaping moth.
- 223:8. Cocoon as spun by the silkworm.
- 223:9. Cocoon with the floss removed, ready for reeling.
- 223:10. Pierced cocoons useless for reeling.
- 223:11. Cocoons after boiling with soap to remove gum.
- 223:12. Cocoons prepared for combing.
- 223:13. Raw silk.
- 223:14. Frisons: waste made in reeling.
- 223:15. Frisons after boiling in soap to remove gum.
- 223:16. Frisons ready for combing (see L 223:3).
- 223:17. Combed silk.
- 223:18. Roving (fine).
- 223:19. Roving (coarse).
- 223:20. Spun silk (fine).
- 223:21. Spun silk (coarse).
- 223:22. Spun silk (colored).
- 223:23. Silk thread.
- 223:24. Silk floss.
- 223:25. Raw silk from various countries.
- 223:26 to 223:30. Dress goods.
- 223:31 to 223:35. Pile fabrics.
- 223:35 to 223:42. Ribbons.

Literature.

- L223:1. Silk, its origin, culture and manufacture.
- L223:2. The silkworm and its silk.
- L223:3. A short description of silk and silk manufacture.

Pictures.

- P223:1. The silkworm moth.
- P223:2. Chinese feeding the silkworm.
- P223:3. The mulberry tree.
- P223:4. Gathering the silk cocoons.
- P223:5. Chinese reeling silk by hand.
- P223:6. Spinning silk in an American factory.

As the index shows, the materials sent out are of three kinds (a) literature descriptive of the products, (b) pictures, and (c) the product itself in various stages of its growth, preparation or manufacture. The descriptive literature is sometimes obtained from current publications. If it is possible to obtain enough copies of a publication containing a desired article, the pages containing the article are cut from the magazine and bound in manila covers. For this purpose publishers have often furnished a number of copies of a desired publication at greatly reduced rates. If it is impossible to obtain enough material in this way the article or certain parts of it is typewritten and mimeographed. Sometimes the descriptive matter is copied from commercial reports and encyclopedias of commerce not available to the average teacher. However obtained, the literature is always placed between covers of manila paper held in place by brass fasteners.

The pictures, which form a very important part of the sets, are variously obtained. They may be either magazine articles mounted on stiff cardboard or they may be taken from the very attractive booklets with which manufacturers advertise their wares. Often times the use of photographic negatives may be obtained from private individuals. Many valuable photographs have thus been obtained for the Chicago Bureau of Geography.

The collection of the material is a work of time and patience. Many firms and individuals are glad to make contributions when the matter is properly presented to them. It is very rarely that any charge is made for the material furnished. In many cases large contributions were made on condition that the expense of packing and the express or freight charges be paid by the Bureau of Geography. One large Chicago firm has offered to make twelve attractive exhibits of fur, provided that the Bureau pay for the time of the man doing the mounting and arranging of the sets. The offer was accepted and twelve sets of fur are soon to be added to the list of the Bureau.

Sometimes the interest of the Chicago agents for foreign firms has been aroused in the work and they have been instrumental in obtaining exhibits from their home countries. Even now one of the representatives of a large firm of chocolate manufacturers has arranged to have sent by his firm in Holland a large amount of material, to make up into sets to illustrate the cacao plant and the processes its fruit undergoes in the manufacture of chocolate and cocoa.

Through personal solicitation by the curator new sets of materials are constantly being added to the Bureau of Geography, thereby increasing its usefulness and efficiency. Each year a greater number of schools are making use of its materials and it is hoped by those interested that the number of schools that the Bureau serves will grow in just the proportion that the Bureau becomes more and more perfectly equipped.