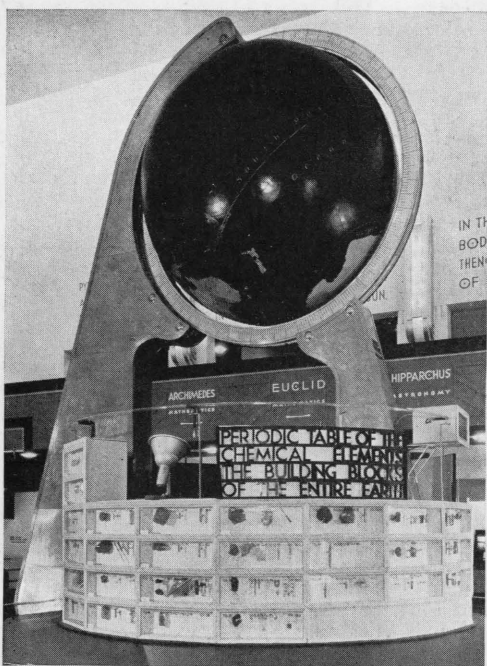

HIGHLIGHTS

of the

EDUCATIONAL EXHIBITS

CHICAGO WORLD'S FAIR



The World and Its Contents—Great Hall, Hall of Science

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Compiled for

SCHOOL TEACHER CONDUCTORS
FOR STUDENT TOURS
SEPTEMBER-OCTOBER, 1934

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A CENTURY OF PROGRESS
EXPOSITION

A Century of Progress Exposition Student Tours

Foreword

A Century of Progress Exposition will close its gates forever Oct. 31 and its wealth of material for observation and study, already studied by thirty million people, will be scattered to the four ends of the earth eight weeks after school begins.

It would be almost tragic if this greatest collection of study and teaching material ever assembled were not utilized to its fullest possibility. School officers and staffs, therefore, will wish to consider, when their schools open, the special opportunities for student tours under guidance of teachers and the unusually low rates the Exposition is now offering to schools.

This booklet indicates what can be seen by a teacher and group in one or two days. For this purpose it gives only a cursory vision of the types of unusually striking illustrative material for reinforcement of school class room studies.

Authorities: University professors, supervisors of public school departments, chairmen of exhibit committees, staffs of educational museums, heads of exposition departments and its respective area chiefs, subject supervisors, and heads of Technical Schools and a force of skilled teachers assigned from the Illinois State Emergency Relief Commission have aided in the selection, compiling and editing of the booklet. The staff of the Museum of Science and Industry which cooperated with the Exposition in the making of many of the scientific exhibits have generously aided in their descriptions in this list.

Many of the above are on the Student Tour Advisory Committee working with Mr. Benjamin F. Buck, Assistant Superintendent in Charge of High Schools in Chicago, assigned as chairman by Superintendent of Schools William J. Bogan to cooperate with President Rufus C. Dawes in sponsoring the plan.

Proved Methods: Student tours conducted last winter to the Museum of Science and Industry (Rosenwald Museum) guiding 40,000 students under skilled direction, have proven successful methods to follow in September and October with the hundreds of thousands of students that will be organized to survey the wider theater of the Exposition collections.

School Values: Some school officers, greatly impressed by the value of such tours, have stated that a day or two spent in the Exposition in this way gives a broader experience than numberless incidental visits. One principal of a school famous for its progressive work, has said, "One such well planned efficient tour is worth a semester's work in the school room." The educational subject matter of the Exposition is shown under carefully checked subject headings adjusted to school curricula and class room use.

Guidance: Uniformed guides and guards in the different buildings will aid in leading the student groups to any desired location. Buildings are shown after exhibits by a symbol. These are listed on a later page. Exhibitors' names, where mentioned, are given to help indicate the location in a large building or a special building. A complete list of exhibitors with the description of their exhibits is found on the last pages of the Official Guide Book.

Special Rates: Exposition authorities have granted liberal terms: free admission for teacher conductors, and the 5c rate for members of their student group. They have provided other low rates in order to bring these tours within reach of every student. These rates are only for groups of ten or more.

Correspondence is invited from school officers for additional school room material and information and for advance notice of tour planned so that the Exposition may give free service of special guides when needed and clear reservations.

EDW. L. BURCHARD,
Chief, Student Tours Section.

MAN AND HIS WORLD

Reflected in School Curricula and the Century of Progress Exposition

The "Highlights" educational exhibits in this list are supplemented under each subject by much additional valuable educational selections that could not be included in this booklet for want of space.

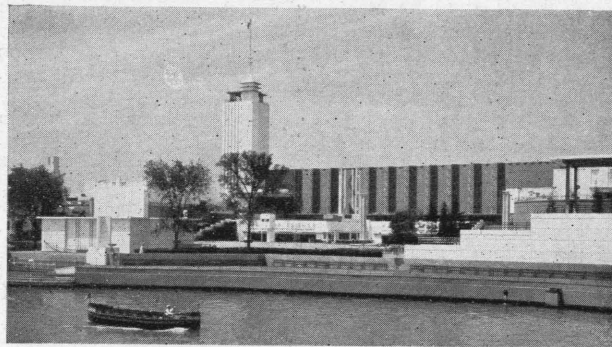
Mimeographed copies of this further data can be secured for classwork by writing the Student Tour Section, Century of Progress Exposition.

Extensive scientific models and exhibits were specially constructed by the Century of Progress Exposition jointly with the staffs of the Museum of Science and Industry and many other educational institutions.

All photographs are by the Kaufmann and Fabry Co.

Abbreviations

(W.)—West; (S.)—South; (N.)—North; (E.)—East; (Fl.)—Floor; (P.)—Page; (Rp.)—Ramp. Symbols for buildings indicated in each chapter are shown below the chapter heading.



The Hall of Science

NATURE AND BASIC SCIENCES

Hall of Science—(noted as (H.S.): Its Great Hall (G.H.) Electrical Building—(El.). Court of States (C.S.). Food Building (F.). Pages (P.) refer to Official Guide to the Exposition (25c at Information Stands) except in the Hall of Science (H.S.), where pages (P.) refer to the Official Handbook of the Basic Sciences and is followed by the section number in that Handbook (15c at stands in Hall of Science).

ASTRONOMY

The Adler Planetarium and Astronomical Museum Northerly Island

Ancient Instruments—An unexcelled collection of globes, armillary spheres, mechanical planetaria, astrolabes, sun dials, hour-glasses, clocks, early telescopes, made by the most skillful craftsmen of the fifteenth to the nineteenth century. Instruments showing modern methods of observing, dynamic principles, laws of spectroscopy, instruments of surveying, of navigation, for measurement of photographic plates, and for computation. P. 64.

Astronomical Photographs—In the form of transparencies made from the finest negatives from the world's greatest telescopes. P. 64.

The Zeiss Planet Projector—The climaxing feature of the museum. A great theater of the sky where astronomy is dramatized, where a curious, grotesque instrument studded with lenses, projects stars as brilliant points of light on the interior surface of a great dome. They shine there in perfect illusion of the open sky, as though the dome had expanded to infinite

size. One can see the celestial host in its daily journey across the sky, the Sun, Moon and planets threading their ways among the stars, can see the course of the seasons, can view the sky as seen from the poles, the equator, or any intervening latitude, can see the change due to precession. The day, the year, or even the long precessional cycle may be shortened into minutes or even seconds. P. 64.

CHEMISTRY

Alchemist's Laboratory—How the science of chemistry began. H.S. G.H. P. 76 (9-A). Merck & Co.

Chemical Combination—Two large scale demonstrations of how iron burns in oxygen and phosphorus burns in air. H.S. G.H. P. 79 (9-E & F).

Chemical Separation—Continuously operating exhibits show heat decomposing mercuric oxide and electricity decomposing mercuric nitrate. H.S. G.H. P. 79 (9-G & H). Fan Steel Co.

Chemical Exchange—Two large scale demonstrations of thermit reaction. Potassium reacts with water. H.S. G.H. P. 80 (9-I & J). Metal & Thermit Co.

Catalysis—Three different exhibits of finely divided platinum speeding up chemical action. H.S. G.H. P. 81-82 (9-O & P). Thos. T. Dee & Co.

Colloidal Gold—A perfect demonstration of the Tyndall effect. H.S. G.H. P. 83 (10-B). Goldsmith Bros.

Ore Flotations—The application of colloidal chemistry in the separation of valuable minerals. H.S. G.H. P. 85 (10-D). Denver Equipment Co.

Model Oil Refinery—The treatment of crude petroleum traced from the storage tank to the finished products, gasoline, lubricating oils, etc. H.S. G.H. P. 86 (11-A). American Petroleum Industries.

Coagulation of Rubber from Latex—A fundamental chemical process in the rubber industry. H.S. G.H. P. 87 (12-C). Firestone Rubber Co.

Liquefaction of Air—A series of nine exhibits showing the properties of air and how it may be liquefied. H.S. G.H. P. 89-91 (13-C to K). Union Carbide and Carbon Co.

Electric Furnace—The furnace in operation. H.S. G.H. P. 92-93 (14-A to I).

Electroplating—Exhibits demonstrate the reversible plating of copper and commercial chromium plating, also metallic crystals on display. H.S. G.H. P. 94 (14-J-K-L). Various exhibitors.

Coal Tar Products—Exhibits of dyes, plastics and other applications of modern organic chemistry. H.S. Balcony. P. 94-95-96 (15-A to J). Bakelite Co.

Periodic Tables—The most elaborate table of the elements ever constructed. Each element is represented by a specimen and representation of its properties. H.S. G.H. P. 20 (1-A).

Heavy Water—Ordinary water is composed of two kinds of water. Preparation and properties demonstrated. H.S. G.H. P. 32 (1-G). Columbia University and Ohio Chemical Co.

Composition of Air—Composition of air and common and rare gases, also unusual presentation of gaseous lighting, neon, helium and argon. El. 1st Fl. P. 99. Federal Electric Co.

Rubber—Rubber, from the sap of the tree to the sole of the shoe; other industrial products. El. 1st Fl. P. 98. Van Cleef Bros.

Chemical Display—Materials, uses and results of chemical investigations, minerals. Illinois State Exhibit, C.S. 1st Fl. P. 84.

Resources from the Ground—Typical minerals and products found in the State of Arizona. Ariz. Bldg. N. 1st Fl. C.S. P. 82.

Minerals—Products found in State of Georgia, in natural resources. C.S. 1st Fl. N.E. P. 84.

Mining Ore and Minerals (California)—C.S. 1st Fl. N.E. P. 83.

Soil Inoculation—Culture of the soil, chemical inoculation. F. 1st Fl. S.E. P. 69.

GEOLOGY

Geological Time Clock—This Giant Clock of the ages represents in dramatic fashion the great age of old mother earth and shows a series of most important geological events in the history of the world and its inhabitants. Buffalo Museum of Science. H.S. N. Great Hall. P. 30 (1-C).

The Earth's Interior—A rotating sectioned globe shows how the earth is built up of concentric layers, and in this respect has a structure similar to that of an onion. The inner layers are the heaviest, the density at the core being about 11.6, at the surface 2.7, and for the entire earth about 5.6. Buffalo Museum of Science. H.S. 2nd Fl. N.E. P. 120 (34-A).

Moving Sand Dunes—An operating diorama showing how sand dunes migrate and build up their characteristic structure. The action is described by a synchronized phonograph attachment. A Century of Progress. H.S. 2nd Fl. N.E. P. 124 (36-A).

Stream Erosion and Deposition—This exhibit is a deformable stream or "U" shaped tank in the arms of which miniature streams carve their valleys, and at the base of which their sediments come to rest in a depositional area in much the same way that similar processes operate on a larger scale in nature. University of Chicago. H.S. 2nd Fl. N.E. P. 124 (37-A).

The Folding of Mountain Ranges—This model demonstrates how great pressures acting within the earth are responsible for the folding of rocks into the mountain ranges which form the frame work of the continents. The rock layers which are folded are represented by sponge rubber and the weight of the overlying sediments is duplicated by lead shot. Chicago Museum of Science & Industry. H.S. 2nd Fl. N.E. P. 128 (40-A).

A Typical Oil Field—This exhibit is a diorama showing the rigs in an oil field, together with a cross section of the underground structure. Several wells are in operation, and the cross section shows the migration of oil, gas and water. A synchronized mechanical voice explains the exhibit. H.S. 2nd Fl. N.E. P. 129 (41-A).

Seismographic Prospecting—A large animated wall model illustrating the method of studying geological structures by means of artificially produced earthquake waves which are recorded on a portable type of seismograph. H.S. 2nd Fl. N.E. P. 131 (41-J).

Drop Well Drilling—Two large floor models are operating replicas of the rigs used in oil well drilling, both standard and rotary types being shown. There is an equally large scaled panel which shows the underground operation of the tools used by these two types of rigs. H.S. 2nd Fl. N.E. P. 133 (41-N).

Coal Mining—A large diorama which shows the methods of mining anthracite coal which occurs in inclined seams. The model is arranged so that both the surface and underground workings are visible to the observer. H.S. 2nd Fl. N.E. P. 134 (41-W).

Evolution of the Horse—A series of models illustrating the evolution of the horse from a small forest-living mammal with four toes on the forefoot and three on the rear, to the modern domesticated animal with only one toe on each foot. Wards Natural Science Estab. H.S. 2nd Fl. N.E. P. 139 (44-D).

Oil—Connection between the age of monsters and the origin of oil deposits. Sinclair display of prehistoric animals. 22nd Street. P. 57.

Diamond Mine—A diamond mine of Kimberly, South Africa, is reproduced; three hundred feet of underground tunnels are reached by going down a mine shaft where one gets the illusion of a 1500-foot descent. In a diamond recovery plant actual diamonds are recovered from blue ground rocks sent from South Africa. Diamond cutting and polishing is done by cutters trained in Amsterdam. Many industrial uses of diamonds are shown. Reproductions of all the

jewelled crowns of Europe and all the big diamonds in the World up to 175 carats' weight are displayed. G.E. Pav. 3 1st Fl. P. 50.

MATHEMATICS

Slide Rules—How to make arithmetical calculations with speed and accuracy sufficient for most purposes. H.S. 1st Fl. N. P. 36 (2-D). Keuffel and Esser.

Johansson's Gauges—Steel blocks geometrically flat to within a millionth of an inch. H.S. 1st Fl. N. P. 36 (2-E). Ford Motor Co.

Galton Quincunx—Fundamentals underlying study of statistics, demonstrated visually. Buffalo Museum. H.S. 1st Fl. N. P. 37 (2-I).

Practical Geometry—Models illustrating problems encountered in sheet metal construction. H.S. 1st Fl. N. P. 39 (2-N). Ford Motor Co.

Moving Curves in Three Dimensions—Representation of space figures by an ingenious optical method. Dr. Saul Pollock. H.S. 1st Fl. N. P. 40 (2-P).

Relativity—Popular presentation of Einstein's famous ideas regarding space and time. H.S. 1st Fl. N. P. 41 (2-S).

Fixing a Ship's Position at Sea—How a navigator determines his position from observation of the stars. U. S. Navy. Balcony. P. 42 (2-V).

Radio Communication—How mathematics led to the discovery of radio waves. Includes an exhibit of early Marconi apparatus loaned by the Italian Government. Italian Government. Balcony. P. 42-43 (2-V-W).

PHYSICS

Sound Recording—A complete process of sound recording with continuous demonstrations and lectures. El. center 1st Fl. P. 97. Radio Corporation.

Refrigeration and Temperature Control—Entertaining presentation of the history of food preservation, ancient and modern. El. (Refrigeration Hall) 2nd Fl. N.

Electricity—A diorama of the production, transmission, and application of power plants for generating electricity in farms, city dwellings, buildings and street cars. El. 2nd Fl. west balcony. P. 101.

Industrial Equipment—Metallurgical—Metals under treatment by heat. A sorting machine uses the electric eye. El. 2nd Fl. west balcony.

Power Diorama—Electrical and mechanical power generating machines since 1795. El. 2nd Fl. west balcony south end.

Stratosphere Flight—Exhibit of apparatus used in the scientific expedition of Lt. Commander T. G. W. Settle and Major Fordney into the upper regions of the atmosphere, approximately 11½ miles above sea level. Professor A. H. Compton and Major Chester L. Fordney. H.S. G.H. P. 28 (1-B).

Cosmic Rays Made Visible—The presence and direction of these highly penetrating radiations is clearly demonstrated. Professor A. H. Compton and Bartol Institute. H.S. G.H. P. 30 (1-B).

Gyroscopic Compass—How a spinning flywheel can be made to indicate true north, independent of the Earth's magnetic poles. U. S. Navy. H.S. G.H. P. 31 (1-E).

Molecular Motion—Air pressure due to bombardments by myriads of tiny molecules having the speed of rifle bullets. Museum of Science and Industry of Chicago. H.S. 1st Fl. N. P. 47 (3-B).

Music Over a Beam of Light—A demonstration of sound vibrations transmitted to some distance, optically and transformed back into music. Museum of Science and Industry of Chicago. H.S. 1st Fl. N. P. 54 (4-N).

Franklin's Kite Experiment—How lightning was proved to be electricity. H.S. 1st Fl. No. P. 56 (5-A).

Magnetism and Electricity—Oersted's discovery of the magnetic effect of an electric current demonstrated. Museum of Science and Industry of Chicago. H.S. N. Ramp. P. 58 (5-J).

Radio Waves—Demonstration of Hertz's discovery which has led to modern broadcasting and receiving. Museum of Science and Industry of Chicago, and Italian Government. H.S. N. Ramp. P. 64 (6-T).

Reflection and Refraction of Light—A vivid operating exhibit showing the behavior of light striking mirrors and bending of light passing through prisms and lenses. Museum of Science and Industry of Chicago. H.S. 1st Fl. N. P. 65 (7-A).

Michelson's Interferometer—Demonstration of the tiny and delicate nature of light waves. Museum of Science and Industry of Chicago. H.S. 1st Fl. N. P. 68 (7-J).

X-Rays—Relative penetration of common substances shown in continuously operating exhibit. H.S. 1st Fl. N. P. 73 (8-I).

Radioactivity—The tracks of single particles of helium, shot out from Radium, are demonstrated. Museum of Science and Industry of Chicago. H.S. 1st Fl. N. P. 74 (8-M).



Light Without Wires

Photography—Art of the camera, apparatus, operation and results clearly, completely displayed and demonstrated. H.S. 1st Fl. N.E.

"Romance of Lamps and Lighting"—History of illumination. El. 1st Fl. S.

Making Radio Tubes—Machines are in operation making radio tubes. A collection of radios, all types and sizes, emphasizes the progress of radio engineering in the last 10 years. Amateurs will be interested in equipment displayed for their use. Visitors may make records of their voices in the recording studios. Sound Cameras and projection equipment are demonstrated. An exhibit of wave forms gives a popular answer to the question of how a radio works. El. R.C.A. Hall 1st Fl. P. 97.

House of Magic—A General Electric Research Laboratory demonstration in the Theatre of Science is a series of scientific "miracles." A Geiger counter detects the presence of radioactive materials; a stroboscope makes whirling objects seem to stand still; and a lamp bulb is lighted without wire connections. El. 1st Fl. center. P. 98.

BIOLOGICAL SCIENCES

BOTANY

The Growing Twig—How new wood is formed. This Linden twig, magnified 300 times, makes a year's growth in a few seconds. Buffalo Museum of Science. H.S. G.H. P. 33 (1-H).

Leaf Activities—A series of four panels portrays the activities of the world's greatest factory—the plant cell where photosynthesis is carried on. U. S. Department of Agriculture. H.S. 2nd Fl. S. P. 115 (25-H).

Roots and Root Activities—The peculiar structure of roots is emphasized in showing their adaptation and function in the economy of the plant. U. S. Department of Agriculture, H.S. 2nd Fl. S. P. 113 (25-D).

Fertilization of Flowers—The animated model of a flower demonstrates the mechanics of plant fertilization. Seeds and fruits developing from such fertilization are exhibited. U. S. Dept. of Agriculture. H.S. 2nd Fl. S. P. 112 (25-B)

Stem and Stem Activities—The transportation system of a tree trunk is shown in animated form; also commercial stems and ultimate products. U. S. Dept. of Agriculture. H.S. 2nd Fl. S. P. 113 (25-C).

Heredity in Plants—The structural peculiarities which are the basis of the laws discovered by Mendel are shown in a series of exhibits. Buffalo Museum of Science. H.S. 2nd Fl. S. P. 109 (21-F).

X-Rayed Tobacco—Evolution speeded up in this case by exposure to X-Rays, produces changes in the method of inheritance of hereditary characters. University of California, University of Chicago (General Electric X-Ray Corp.). H.S. 2nd Fl. S. P. 112 (24-A).

Vegetation Regions of the World—An animated map indicates successfully the different vegetation regions with habitat paintings illustrative of each. Buffalo Museum of Science and Carnegie Museum of Pittsburgh. H.S. 2nd Fl. S. P. 116 (28-A).

ZOOLOGY

Microvivarium—Projections from slides show the structure, locomotion and habits of feeding of protozoas. (Dr. George Roemmert). H.S. 2nd Fl. S. P. 97 (17-A).

Human Heredity—Factors which make possible inheritance according to Mendel's laws and the application of these laws to plants, lower animals, and man. Buffalo Museum of Science, University of Chicago, Dr. Carlo Jucci, Jackson Memorial Laboratory. H.S. 2nd Fl. S. P. 108-9 (21-A to H).

Cells—The single cell, the basic element in all life, is shown in structure, growth and reproduction; also the growing of a single cell to make the more complex forms of animal life. General Biological Supply House, Buffalo Museum of Science. H.S. 2nd Fl. S. P. 99 (17-D-G-H).

Man's Bodily Structure and the Lower Animals—A study of the forelimbs, brains, etc., of man and the lower animals furnishes an excellent basis for appreciation of the theory of evolution. General Biological Supply House, Buffalo Museum of Science, Carnegie Museum, General Electric X-Ray Corp. H.S. 2nd Fl. S. P. 111 (23-B to F).

Circulation of the Blood—A working model illustrating the general structure and mechanics of the circulatory system. Buffalo Museum of Science, Clay Adams Co. H.S. 2nd Fl. S. P. 103 (19-C).

Human Telegraph System—This illustrates the functions of the brain and spinal cord as directory agencies and the sense organs and nerves as receiving stations and wires. Buffalo Museum of Science. H.S. 2nd Fl. S. P. 103 (19-A).

Digestive System—The mechanics and chemistry of the digestive process are shown by this operative model. Buffalo Museum of Science. H.S. 2nd Fl. S. P. 104 (19-F).

Wax as an Animal Product—Animals furnish part of the group of materials known as wax. The animal waxes may here be compared with the vegetable and mineral waxes. H.S. 2nd Fl. S. P. 117 (32). S. C. Johnson & Sons.

THE STUDY OF MAN

Hall of Science noted as (H.S.). Hall of Science Great Hall (G.H.). General Exhibits (G.E). Hall of Social Science (H.S.S.). Court of States (C.S.). Pages (P.) refer to Official Handbook of Basic Sciences of the World's Fair if in Hall of Science; otherwise, refer to the Official Guide Book of the World's Fair.

PHYSIOLOGY, ANATOMY AND HYGIENE

The Transparent Man—A full size transparent model of a human body shows the visitor the shape and location of the anatomical parts. Mayo Foundation. H.S. 1st Fl. N. P. 142-3.

Human Embryos—Collection of human embryos and fetuses at various stages in development from a few weeks after conception to birth. Loyola University. H.S. 1st Fl. W. P. 153.

Human Body Sections—Sections of the human body, with the organs individually colored, are displayed between glass plates. Loyola University. H.S. 1st Fl. W.C. P. 154.

Blood—This group of three blood exhibits show clearly the course of the blood, the structure of the organs concerned and the effect of sufficient and satisfactory blood. Buffalo Museum of Science and University of Michigan. H.S. 2nd Fl. S. P. 155.

Burns—Treatment with Tannic Acid—This revolutionary method of treating burns, explained and illustrated in detail, is of tremendous importance in modern industry. Henry Ford Hospital. H.S. N. Ramp. P. 152.

Resuscitation—Animated figures portray the correct methods of resuscitating persons overcome by gas, etc. Modern equipment, including the latest respirators, is exhibited. H.S. 1st Fl. N.W. P. 149. Chicago Rapid Transit Co.

Human Structure—Moving Models—A number of skeletons illustrate in action the joints of the body. Nearby exhibits explain the heart, voice, etc. Buffalo Museum of Science. H.S. 2nd Fl. S. P. 104.

Correct Brushing of Teeth—Correct methods of brushing teeth in different parts of the mouth are illustrated by motor-driven models. Dental Health Exhibit. H.S. 1st Fl. N. P. 152.

Crippled Children Care—The work being done for the crippled children in the Chicago area is covered in a detailed display. University of Chicago. H.S. S. Ramp. P. 155.

Tropical Medicine—Wellcome Research Institute. H.S. 1st Fl. N. P. 142.

Pasteur—Pasteur Institute. H.S. 1st Fl. N. P. 144.

Tuberculosis—Treatment of tuberculosis is shown in two exhibits. Chicago Municipal Tuberculosis Sanitarium. H.S. 1st Fl. N.W. P. 149. Robert Koch Institute of Berlin. H.S. 1st Fl. N. P. 145.

Italian Medicine—Italian Government. H.S. 1st Fl. N.W. P. 145.

Mental Hygiene—Extensive exhibition, results of research in last hundred years. Sponsored by State of Illinois and 90 private agencies. Social Welfare Work. H.S.S. 1st Fl. P. 92.

Child Labor—Home Economics Bureau, U. S. H.S.S. 1st Fl. Research material.

Bacteriology—Charts, graphs and demonstrations of various diseases. Microscopic illustrations. Venereal disease, quarantine of vessels. Public Health. C.S. Fed. Bldg. S. 1st Fl.

Germicide, Disinfection of the Home—Preparation for sterilization and disinfecting of homes, animals, etc. C.S. Fed. Bldg. W.

Infant Incubator—Care of premature and underweight babies. 23rd St. P. 109 (Charge).

History, Anthropology and Archeology—Sponsored by leading universities, including Oriental Institute, Logan Museum, Harvard, Anthropometrical Laboratory and Western Reserve. Reproduction of Cro Magnon Cave in France and three ages of Indian mound builders in America, etc. H.S.S. 1st & 2nd Fl. P. 90-92.

Foreign Exhibits of Medical Science—Contributions made in the study and research upon diseases. Examples of tape-worms from various animals. Demonstration of the biting apparatus of the Tsetse Fly of sleeping sickness. H.S. P. 142-145. 1st Fl.

Progress of Surgery—Five dioramas illustrating the progress of surgery during the last century. Amputation of legs before days of antiseptics. Abdominal operations without anesthesia. First demonstration of anesthetics for the removal of tonsils, etc. The Wellcome Research Institution of London. H.S. P. 142. 1st Fl.

Care of the Deaf and Blind—Methods of enlarging the use of the senses of touch and vibration in the education of the deaf and blind. The visitor, resting his fingers upon the receiver and speaking into the microphone may feel his own voice, and also the voice of his friends. H.S. P. 146. American Institute for the Deaf and Blind. 1st Fl.

Progress of Medicine—Steps in medical practice displayed by dioramas contrasting the necessity of the "saddle bag" doctor of olden times, with the physician of today who at all times is within speaking distance of his patients. American Medical Assn. H.S. P. 146. 1st Fl.

Story of Pharmacy—Earliest Chicago pharmacy; story of pharmacy shown through reproductions dating back to 1500 B.C. American Pharmaceutical Assn. H.S. P. 147. 1st Fl.

Controlling Cancer—Cancer is curable. In a mechanical unit cancer is compared to a fire in early stages which can be controlled, but in huge conflagration, there is little hope for control. Cancer is shown as the disorderly growth of cells following no law. H.S. P. 148. 1st Fl. American College of Surgeons and American Society for the Control of Cancer.

Diseases of Animals—There is a model of cows showing what takes place when one swallows a foreign body, nail, resulting in the condition known as traumatic pericarditis. Bone surgery shows how pieces of living bone can be shaped and used as grafts. American Veterinary Medical Association. H.S. P. 148. 1st Fl.

Committee on Diabetes—Diet and diseases. Exhibit shows what diabetes is, its causes and curability with diet, and insulin. H.S. P. 149. 1st Fl.

Evolution of Resuscitation—Two working models of the adult and infant. Respirators are displayed with manikins. Chicago Rapid Transit Medical Department. H.S. P. 149. 1st Fl.

Detection of Causes of Death—Diorama symbolizing the tragedy and enigma of death. Autopsy rooms, medical and examination procedures. Use of bacteriology, serology, chemistry, etc. Institute of Medicine of Chicago. H.S. P. 153. 1st Fl.

Thyroid Gland—A large model of the thyroid gland in wax and seven types of goiter and thyroid gland deficiency. The successive stages are shown in the extraction of a few grains of thyroxine, the active constituent of the thyroid gland, from 25 pounds of raw material. X-ray laboratory. Electrical thermometer. Mayo Foundation. H.S. P. 154. 1st Fl.

Ether Anaesthesia—This is a memorial exhibit to Crawford Long, the discoverer of ether anaesthesia. Photographs and photostatic copies of letters proving his priority are shown. Univ. of Georgia. H.S. P. 155. 1st Fl.

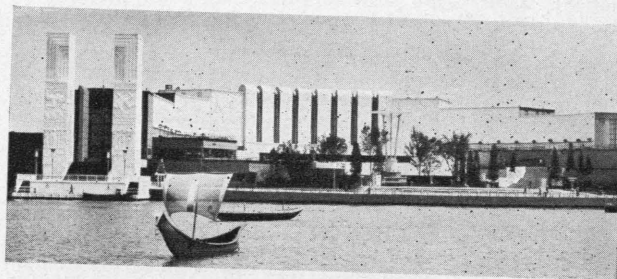
Pneumonia, Hemophilia and Rabies—This exhibit composes material showing the relation of focal infections to the systemic diseases, hay fever, tuberculosis, pneumonia, hemophilia, and rabies. Health conditions of 100 years ago are contrasted with those of today. Univ. of Illinois. H.S. P. 156. 1st Fl.

Gastric Digestion—This shows some of the epoch-making work on gastric digestion done by Alexis St. Martin, the patient, and William Beaumont, the surgeon. In this case the patient had a permanent gastric fistula as a result of a gunshot wound in the abdomen. Dr. Beaumont described the nature and action of gastric juice within and without the body, and the conditions under which gastric juice is secreted in the stomach. University of Wisconsin. H.S. 1st Fl. P. 156.

TECHNICAL AND INDUSTRIAL ARTS

General Exhibits noted as (G.E.); Electrical Building (El.); Pages (P.) refer to Official Guide Book of the World's Fair.

The achievements of modern technical science are applied on a gigantic scale at the 1934 Century of Progress in the illumination of the grounds, the design and construction of the buildings, the transportation and communication facilities, and the ease with which throngs of visitors are accommodated.



The Electrical Building

ELECTRICITY

Electricity at Work—A 10-minute stage show, "More Leisure in the Home," portrays how electricity banishes dinginess and drudgery from the home. Household appliances are seen in use in the all electric kitchen and laundry. Lamps of 50 Centuries ago and of today, mercury vapor lamps, filament lamps of all sizes and description, for every purpose, illustrate the importance of the modern science of illumination. Cut-away and operating models of small electric motors are instructive for the amateur electrician. Other interesting devices are an oscillograph, sewing machines, air conditioning equipment, batteries, washers, and a loom weaving a rug. El. 1st Fl. center. P. 99.

Electric Power—Diesel engines, electric motors of all types and sizes, generators driven by water wheel and steam turbine show how the forces of nature are harnessed. A cross section of a large generator is mounted and revolves under a glass floor; the complete spindle of a large steam turbine is suspended overhead. A huge lightning arrestor suggests the very high voltages that are transmitted. Switches, switch panels, and recording instruments for power control are displayed. A diorama 92 feet wide shows a modern community by day and by night with factories running and trains speeding across country. Mountain and plain, hydro-electric plants are hooked up with a coal burning plant to illustrate in miniature the generation and transmission of electric power and its use in city and country.

Working models show the development of the steam reciprocating engine, steam turbine, and electric generator, prior to 1893. An instructive layout illustrates the complete range of the electromagnetic spectrum. The electric eye is used as a smoke indicator, size sorter and color selector. El. 1st Fl. and 2nd Fl. S. P. 99.

Electrical Communication—High spots of this exhibit are—an historical collection of telegraphic equipment; a bulletin ticker giving news happenings in all parts of the world; a teleregister automatic quotation board operated during market hours from New York; automatic fire alarms, sprinkler supervision, watchman supervision, and burglar alarms not only on exhibit but actually on the job protecting the grounds and buildings of the Exposition. There is a motion picture with description of the laying of the transatlantic cable. A working model shows what happens when lightning strikes the telegraph lines. How a master clock can electrically synchronize thousands of other clocks is shown. El. 1st Fl. N. P. 94.

RADIO

Amateur—An amateur radio station is in operation and permission is given to licensed operators who have their licenses with them, to broadcast and receive messages. T.T. P. 149.

Commercial—A miniature tube factory turns out more than 2,500 radio tubes daily. A giant thermionic tube explains the working of the tubes in our radios. Every step of the construction and testing of a custom built radio receiver is shown in various stages of construction. There is a demonstration of an all wave receiver and a scientific exhibit of radio testing apparatus. Also a demonstration of short wave sound transmission. El. P. 98-102.

TELEVISION

Television—Is still unique and in the experimental stage, but the Exposition has two complete studios. They present short television skits and televise actors and members of the audience. Adjoining the theatre visitors may carry on two way television conversations between booths, each talker being visible to the other. El. P. 102.

AUTOMECHANICS

Making Auto Parts—Automatic machines turn out auto parts, aluminum motor blocks are cast, a trade school is in operation, complete sets of Johansson gauges are on display. A display to demonstrate the dependence of industry upon the soil shows raw materials such as copper, iron, zinc, aluminum, rubber, cotton, and wool being processed to form parts of a finished automobile. A small machine shop in which automobile parts are made shows how the farmer may also be a small scale manufacturer as well as food grower. Ford Bldg. N. Wing. P. 135.

Auto Assembly Line—Quantity production and the use of conveyers in the modern plant are well demonstrated. Electrically driven screw drivers and wrenches reduce human exertion. Steel bodies are welded and bolted. The lengthy series of processes required in applying an attractive and durable coat of paint to a motor car body may be watched. The finished car embodies many lessons that have been learned in the research laboratories. There celluloid models of gears and parts are subjected to strains as revealed by polarized lights; by means of the stroboscope parts revolving at high speed are studied. General Motors Bldg. 1st Fl. P. 140.

Auto Tire Factory—Crude rubber is collected from tropical plantations and the necessary ingredients needed for tire rubber are added; fabric is "gum dipped," and coated on both sides with rubber under pressure. Tires are made to take the shape of the mold by means of enormous air pressure. After six hours in the vulcanizer they emerge as finished tires ready for service. Firestone Bldg. P. 59.

SHOP WORK AND CRAFTS

Model Home Workshop—A fully equipped and properly arranged shop for the home basement contains electrically driven and hand tools. G.E. Pav. 3 2nd Fl. P. 50.

Forge Shop—A drop forge and electric furnace are in operation shaping steering knuckles. Welding is done and safety glass made. A testing track demonstrates the strains and stresses to which auto parts are subjected; air-flow design is featured. Chrysler Bldg. N. Wing. P. 142.

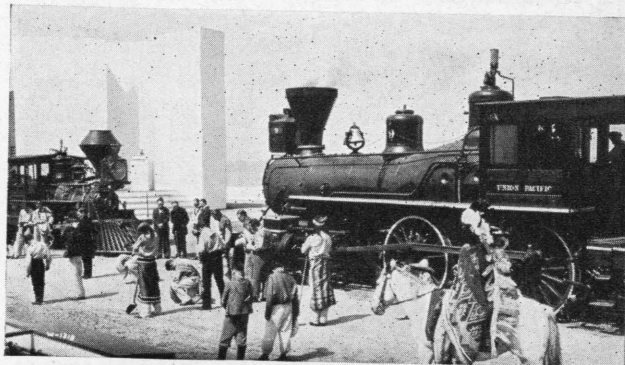
Mechanical Wonderland—More than 200 working models show mechanical principles in action. Combination of wheels, eccentrics, gears, and levers run continuously performing intricate motions. G.E. Pav. 1 2nd Fl. P. 47.

Gutenberg's Print Shop—A reconstruction of Gutenberg's Press and printing of its time is seen alongside of fine press work and book binding of the present day. Some of Gutenberg's original molds are used in casting type and proofs are pulled on an ancient hand press. G.E. Pav. 2 1st Fl. P. 47.

Pottery Exhibit—Indian pottery makers of New Mexico work at this very old craft shaping bowls of native clay which are dried, polished, painted, and baked in primitive fashion. Haeger Potteries Bldg. S. of Home Planning Hall. P. 135.

TRANSPORTATION AND COMMUNICATION

Travel and Transport noted as (T.T.); Federal Building (F.B.); Western Union Hall (H.C.); Electrical Building (El.); Pages (P.) refer to the Official Guide Book of the World's Fair.



Spanning a Continent

HISTORY

Wings of a Century—A spectacular historical drama depicting the creation and development of the transportation system of the United States. The largest collection of actual historical vehicles ever brought together and shown in action under their own power are used in this intensely interesting pageant. Charge. Opposite T.T. P. 151.

Roads of the World—A roadway reproduces, in nineteen separate sections, examples of world famous highways from the earliest Roman and Chinese roads to the smoothly-paved highways of today. Ford Gardens. P. 137.

Museum of Road Vehicles—Collection showing the development of road transportation from the earliest Egyptian chariots and Chinese carts down through the middle ages to covered wagons and stylish Victorian equipages. Also a very complete collection of early motor vehicles from the first steam road buggy and early gasoline engined autos to the present stream lined models. Ford Bldg. P. 137.

RAILROADS

History and Development—A replica of the "John Stevens," first steam locomotive in America. "The Pioneer," first steam train to run out of Chicago on a regular run. The original "Atlantic" a locomotive built in 1832 is contrasted with the most modern electric locomotive used in the mountain regions and the most modern steam locomotives. T.T. P. 145.

Sleeping Cars—The first "Pullman Palace Car," a small weather worn brown wooden sleeping car with wooden bunks let down above the low seats, stands between the first two aluminum sleeping-observation cars. T.T. Dome. P. 147.

Technical Developments—You may step into a full-sized locomotive and examine the controls. Sections of early and modern roadbeds and specimens of tracks and ties may be seen. Also full-size models of railroad couplings from the earliest to the most modern. Graphs and charts from a railroad testing laboratory may be seen in an exhibit nearby. T.T. P. 147-8.

Outdoor Railway Trains—An epoch-making exhibit, revealing the swift advancement and evolution of transportation, featuring two new streamlined alloy metal trains, seen beside a standard high speed steam train of six air-conditioned cars weighing about 600 tons. The new train weighs about 85 tons. T.T. Outdoors. P. 150.

AUTOMOBILES

General Interest—The largest automobile ever built, 80 feet long by 39 feet high is a motion picture theater telling a story of motor car manufacture. An exhibit of automobiles, features, ideas in streamlining. An exhibit of early tractors is contrasted with modern trailer-tractors and pneumatic tired tractors. T.T. Gt. Hall. P. 150.

Manufacture—Actual electric furnace and drop forging, hydraulic brakes, a miniature rolling mill and bearing manufacturing, demonstrations of floating power, gasket and spring manufacture and exhibits showing air flow designing are shown. Manufacture of automotive parts, such as radiators, covered wire, sparkplugs, gear-cutting, aluminum, imitation wood, glass, upholstery, body-lining, die-casting, and coremaking are featured. Ford & Chrysler Bldgs. P. 137 and 142.

AERONAUTICS

Airplane Testing—National Advisory Commission on Aeronautics presents miniature of largest wind tunnel for airplane testing. Measurement of air pressure and bumps. Plane maneuvers with explanations. Safety devices, research, miniature seaplane research tank and ship display. F.B.

Weather—U. S. Bureau of Air Commerce. Signal beacon, weather forecast and weather maps. F.B. 1st Fl.

Lighthouses—U. S. Marine Corps. Lighthouse, map locations, airplanes and propellers. F.B. 1st Fl.

Modern Plane—Personal inspection of the most modern and world's swiftest multi-motored, all-metal passenger plane. The ship's capacity is ten passengers, crew of three and 800 pounds of mail and express. The cabin is thermostatically heat-controlled with vapor heating, has reclining chairs for night travel and a luncheon sideboard. T.T. Dome. P. 147.

Dirigibles—A dirigible airplane makes frequent trips over the Exposition grounds carrying paying passengers. Goodyear Field. P. 155.

Air Port—There is a landing for amphibian planes and sightseeing rides may be had for a moderate fee. Palwaukee Airport. P. 143.

WATER TRANSPORTATION

Inland Waterways Inc.—The Federal Barge Lines maintain a talking moving picture illustrating some of the nation's inland waterways. T.T.

Steamships—Regular passenger trips are made on schedule between the Exposition and business center of Chicago.

ELECTRICAL COMMUNICATION

TELEGRAPH AND CABLE

Service Around the Globe—Many exhibits demonstrate the world wide spread of telegraph and cable service around the globe. Relics and reproductions lead from the inventions of Henry in 1829 and Morse in 1835, through a century of telegraphic history to the high speed land lines and cable apparatus now in use. Automatic fire alarms, watchman supervision and burglar alarms demonstrated in this exhibit are actually hooked up and on the job, protecting the grounds and buildings of the Exposition. H.C. P. 95.

Atlantic Cables—Motion pictures with description of the laying of the Atlantic cable are shown. H.C. P. 95.

Telegraph Typewriters—Operation of the telegraph typewriter, by means of which 90 percent of the nation's business is handled, is demonstrated. One may touch a typewriter key and see the letter automatically formed in the five unit telegraph alphabet. H.C. P. 95.

HOME PLANNING AND ECONOMICS

General Exhibits Building noted as (G.E.), Horticultural Hall (H.H.), Home Planning (H.P.), Foods and Agriculture (F.), Electrical Building (El.), Pages (P.) refer to the Official Guide Book of the World's Fair.

Home Planning—Suggestions for critical selection of material and equipment for the home may be found here. Scientific tests are made of household machines, a coat of paint is subjected to destructive light rays, wire fencing is given a metallurgical test, and enamel wares are tried for resistance to chipping, to straining and to heat. Water systems and oil burning equipment are displayed. A furnace having one side cut away shows how the heat from coal is used to best advantage. Tests are made of blowers, conveyers, thermostatic controls, water heating systems, magazine feed boilers, cooking ranges, vacuum furnace cleaners and parlor heaters. Plumbing displays emphasize sanitation in the home. Air condition installation show the latest in home comfort and helpfulness. Home Planning Hall. P. 135.

MODEL HOMES AND GARDENS

Modern and Unusual Houses, Bungalows and Kitchens—Remarkable full sized exhibit of ideal homes, including Houses of Tomorrow, Masonite, Rostone, Brick Florida, Stransteel, Enamel and Lumber, and a General Houses House. 27th St. P. 125-35. Also Sears Model Home near 12th St.

Model Farm House—Shows new ideas of comfort and efficiency applied to the home of a practical farm operator. Furnishing and decoration are in the modern style, according to a simple plan of moderate cost. Farm Area. P. 154.

"Flivver" House—Model home for the farm of the "sub-sistence" type. Scientific modern dwelling of small cost that may be placed wherever desired. Farm Area. P. 154.

Unique 20th Century Bungalow—Unusual display of modern accessories for the bungalow. Complete array of furniture, and rooms done in a modified early American style. Near 27th St. P. 125.

Miniature Rooms of Many Periods—Exceptional collection of perfect tiny reproductions. Pieces have been gathered from all over the world to furnish the rooms in exact duplication of the period style. These include French, English, Italian, Spanish and American styles, from ancient to modern times. Mrs. Thorne. Island 16th St. P. 102.

Tiny Village with Model Homes and Gardens—A miniature village built to the scale of $\frac{1}{4}$ in. to the foot. This includes the only display of its kind with houses, lawns, shrubs and gardens complete. Any one might be used as a model for the modern home. H.H. Nat'l Gardening Bureau. P. 107.

Indoor and Outdoor Gardens for the Home—Remarkable exhibition of beautiful gardens, for all varieties of homes. Oriental, Italian, Persian, and African forms. There is also included an excellent cactus mound and a demonstration of the correct use of flower decoration in drawing rooms, living rooms, lunches, dinners, weddings, etc. H.H. 1st Fl. P. 106.

Formal Garden and Pool—Large central pool with four L-shaped pools at the corners, is surrounded by shady terraces. A garden house at one end gives view as if from a living room (By Good Housekeeping Magazine). Garden 19th St. P. 52.

INTERIOR DECORATION AND FURNISHINGS

Home Furnishings Exhibit—An excellent collection of moderately-priced furnishings. Also new methods of using inexpensive wall paper, furniture, and accessories for the average home. G.E. 2nd Fl. 1st Fl. N. and F. center. P. 46.

Household Appliances—Labsaving devices for the time-loving housewife. Demonstration of useful tools, and methods of speeding up the cooking processes. H.P. P. 133.

All Electrical Kitchen—An all electric kitchen talks and

demonstrates itself; this includes an electric laundry, and many new developments in industrial apparatus. El. 1st Fl. S. P. 99.

Modern Metal Materials—Unusual ways and materials advantageous for the use of metal. Beautiful bedroom sets are done in colored and painted metals of lasting endurance. Sinks, refrigerators, tables, ironers, etc., are given a new finish. H.P. P. 133.

Bathroom Settings—Excellent displays of bathrooms to suit the tastes of all members of the household. Modernistic baths done in black and white, and colors; bathrooms for the kiddies, new color combinations. Kohler of Kohler, and Crane Co. Station. Near H.P. P. 131.

FOODS

Model Kitchens—"The friendly kitchen," "the Traditional kitchen," and "the Modern kitchen," are shown, types to fit the tastes of the housewife who wants individuality and convenience combined. H.P. Gas Industries Hall. P. 133.

Modern Canning—Easiest ways of canning fruits and vegetables are demonstrated by competent and experienced cooks. F. 1st Fl. N.

Dessert Making—Demonstration of making salads, desserts and aspics with gelatine. Hasty meal preparation is aided by the knowledge of uses of this foundation. F. 1st Fl. N. (Center of bldg.).

Ease with Electricity—The drama of electricity in the home, "Leisure for Living," shown in Westinghouse Theatre. Household hints of new uses of electricity. Unpleasantness connected with cooking removed. El. 1st Fl. S. P. 100.

Preservation of Food—Modern methods of refrigeration and temperature control. Entertaining presentation on history of food preservation from ancient to modern times. Continuous program. El. 1st Fl. N.

Cooking by Pressure—Continual demonstration of uses, and handling of the pressure cooker. History of cooking from 35,000 B.C. to modern age, shown through mural illustrations in black and white. F. S.E. 1st Fl.; also near H.P.

Automatic Food Mixing—Simplified methods of mechanical and automatic food mixing. El. 1st Fl. N.E.

Jelly Making—Easy ways to ensure good results in the process of jelly making from all varieties of fruit. F. 1-10 P.M. demonstration N.W. 1st Fl.

Artistic Tables and Well Served Food—Colored pictures showing artistic food preparation, and the setting of tables for various kinds of luncheons, dinners, and informal gatherings. (Picture display) F. 1st Fl. center.

Growth and Preparation of Spices and Oils—Display of history and cultivation of spices from various parts of the world. F. 1st Fl. E.

CLOTHING AND FABRICS

Fashion Show and Fur Display—Excellent display of beautiful and expensive fox furs. In addition there is a daily display of mannequins showing stylish clothing for the coming season. G.E. 1st Fl. E.

400 Costume Figurines—Unique collection of the styles of dress from ancient to modern times. These are represented by the gowns worn by famous people of the times. (Miniature) (Minna Schmidt). G.E. 2nd Fl. S. E.

Hobby Crafts—Rug making from old material, scraps, and worn out rugs. Also a display of sewing and needle work. G.E. 1st Fl. S.

Shirts and Housedresses—Display of the factory processes necessary to the making of simple house dresses, shirts, etc. H.P. 1st Fl. S. (Also see Tech. Arts and Processes.)

A Modern Loom—One of the world's largest looms is seen weaving an American oriental rug. An attachment to the hand loom invented by Jacquard selects the necessary colors to form the pattern. This Edison called one of the greatest inventions ever made. Pattern cards resembling huge piano rolls control the pattern being woven on the loom. An exhibit of all grades of rugs and carpets is arranged near the loom and the necessary steps in weaving them illustrated. G.E. Pav. 3 1st Fl. P. 49.

FINE ARTS AND MUSIC

Horticultural Hall noted as (H.H.); Hall of Religion (H.R.); Home Planning (H.P.); Court of States (C.S.); General Exhibits (G.E.); Hall of Science (H.S.); Pages (P.) refer to the Official Guide Book of the World's Fair.

The entire Exposition is a superior artistic presentation from the standpoint of the lay-out of the buildings, roads and paths, general landscaping and planting.

Buildings designed primarily for utility bespeak sturdy richness in form embellished by simple geometric ornamentation and abstractions. Painted in the richer colors of our time, they present by day and by night an esthetic appeal of such force that we are shocked into wonderment at the daring initiative displayed by the designers. Illumination effects at night delight and instruct in their artistic aspects.



The Beginnings of Art

PAINTING

Old Masters and Modern—The World's Fair Art Exhibition is in the great range of galleries of the Art Institute of Chicago. The immense value of the irreplaceable old and modern works of Art require that they be housed in a permanent building like the granite Art Institute. More than 1000 masterpieces of painting and sculpture are in the exhibition. The loan exhibition is entirely different from last year and comprises many famous works that have never before been publicly shown.

The comprehensive loan exhibit of works of American masters is an artistic event long awaited and finally achieved in this exhibition. Early period from 1705 to 1860 is represented by best works of Stuart, Trumbull, West, Copley, Earl, Harding, Savage, Waldo, Feke, Morse, Hesselius.

Epoch of the Eastern painters is shown by Homer, Innes, Blakelock, Ryder, Sargent and Whistler. Later comes the period of Chase, Duveneck, Carlsen, Cassatt, Twachtman, Weir, Davies, Melchers, Hawthorne, Henri, Bellows and Luks and finally the American artists of today. Art Inst. P. 157. (See Educational Centers.)

Murals—Many murals by noted artists have been painted for the Exposition. Among them are "Mathematics—Physical Sciences" by Bourdelle, "Biology" by Crisler, "Urns" by Bartlett, "Marketing" by Harvey, "Fireworks" by Szulkaska, "Diagrammatics" by Hutchins, "Moon, Stars, and Roses in Gray and Yellow" by Holden, "Wave Lengths" by Norton, and many others.

One of the most striking modern mural paintings of the Exposition is that by Leo Katz of Austria in the Johns-Manville Building. Symbolic figures depict man's effort to control cold, heat, light, motion and sound. H.S. P. 190.

Many of the buildings in the Court of States have murals depicting the history of their state.

Religious Murals—Eight large mural paintings surround the entrance rotunda of the Hall of Religion portraying the aspirations of Judaism, Christianity, Mohammedanism, Buddhism, and Confucianism. Greek Mythology, Ancient Persian Worship and the Worship of the American Indian are included. On the walls of the interior are twelve mural paintings. H.R. P. 53.

Panorama—A World War panorama depicting the noted soldiers and statesmen of the Allied Armies. It is 402 feet long and 45 feet high, and is the work of 128 different artists, and includes portraits of 6,000 individual men and women who rendered conspicuous service during the War. Many of the noted battlefields and surrounding terrain are faithfully pictured. Pantheon de la Guerre. P. 114.

Primitives—Selected works by outstanding exponents of Mexican art. Painters represented Orozco, Riviera, Siqueiros, Carlos Merida, Jean Charlot, Dr. Atl, Carlos Romero, Leal, Vidaurretta, Leopold Mendez, Tamayo, Covarrubias. Mexican Village, Island. P. 107.

ARTS AND CRAFTS

Glassmaking—Venice-Murano Glassmakers. Complete process. Skilled artisans make objects of art and utility of ultrafine design. Official Italian Government Exhibit of Italy's Royal Glass Factory, under direction of Commander Luigi Ranieri. Italian Bldgs. P. 22.

Antiques—Sacred art objects, Chalice of Antioch. Carved Miniature in Mother of Pearl of Da Vinci's "Last Supper." H.R. P. 27.

Antiques—French. Furniture, jewelry, pictures, and clothing worn by French nobility. C.S. 1st Fl. N. P. 82.

Costume Design—Development of costume, ancient to modern. Four hundred figurines representing forty-four countries, featuring famous women. Minna Schmidt. G.E. P. 51.

Handcrafts—Unique bazaar. Moroccan natives. Hand-made authentic articles of utility for the home and for personal adornment. Antiques. Barbarians' weapons. Arabic calligraphy demonstrated. Oasis. Mediterranean Village. 23rd St. P. 112. Craftsmen at their trades producing authentic Mexican articles, in a setting of replicas of their native buildings and furnishings. Island, S. P. 107. Rare Books bound by hand. Artisans at work. Gutenberg Print Shop. G.E. P. 48.

SCULPTURE

Commr. Dr. Pr. Edouardo Simone, appointed by King Victor Emanuel of Italy, presents outstanding exhibition of casts and bronzes of figures in dramatic postures. Leading piece "Religious Ecstasy." Effectively displayed among floral exhibits. H.H.

An heroic size bas-relief of Christ by Lorado Taft. H.R. P. 53.

LANDSCAPE ARCHITECTURE

Wonderful presentation complete gardens, many and various types, including generous use of garden buildings, pergolas, pottery, fountains, sunken gardens, random flagstone paths. H.H. gardens. P. 106.

Classic modern garden. Good Housekeeping Mag. P. 52. Miniature Village of Model Houses, with Lawns, Shrubs, and Gardens. National Garden Bureau. P. 107.

Mosaic Fountains (National Terrazzo & Mosaic Assoc.). P. 65.

PHOTOGRAPHY

Camera Art—Apparatus, operation and results clearly and completely displayed and demonstrated. Hall of Photography. H.S. N.E. Wing. 1st Fl. P. 44.

Exhibition or work by distinguished amateurs and professionals. Historical displays of early cameras. G.E. P. 49.

MUSIC

Music pervades the Fair. The finest symphony orchestras and the lowly native musicians from the far corners of the earth vie with each other in presenting their various forms of cultural entertainment. Science presents recorded music and mechanically produced, transmitted, and re-produced music. Special features abound, especially the visiting musical organizations which perform in the Court of States.

BUSINESS AND COMMERCIAL ARTS

General Exhibits noted as (G.E.); Pavilion as (Pav.); Pages (P.) refer to Official Guide Book of the Exposition.

As industry has expanded and manufacturing methods have progressed, so the problems of office management have increased. Industrial accounting requirements have advanced far beyond the manual stage. Present day production calls for more men, more machines, more departments, more responsibilities. Facts and figures for constant control must be obtained in all possible detail, with accuracy and with speed.

BUSINESS MACHINES

Accounting Machinery—A complete display of business equipment that tells the story of modern business and machine methods of accounting and control. Demonstration of electric accounting and tabulating machines, posting machines, listing machines for proof and cross footing. Time system and time recorders, ticketograph and check writing and bank accounting machines are explained and operated. Intricate tasks that would require thousands of eyes and fingers are rattled off by machines at dizzy speeds. G.E. Pav. 3. P. 49.

Cash Registers—An exhibit of modern cash registers. Registers for different types of business, for food checking, department stores, soda fountains, restaurants, taverns, etc. Registers for foreign money as pounds, shillings and pence and Japanese sen. G.E. Pav. 3. P. 50.

Dictation—Demonstration of a stenotype machine, a machine for shorthand reporting, which uses alphabetic letters in code with machine accuracy instead of arbitrary signs. When this machine is used the notes can be easily transcribed by others familiar with the code. It is used extensively in reporting public speeches. G.E. Pav. 3. A modern office exhibit demonstrating dictation by dictaphone with accessory transcribing and shaving machines. By this method any report, letter or article can be dictated into this machine without the presence of the typist and be transcribed at a future time. G.E. Pav. 3. P. 50.

Visible Records—A display of office looseleaf file and recording equipment. G.E. Pav. 3. P. 50.

Duplicating—An exhibit illustrating the development of duplicating work with a stencil. Not only ordinary typewriting but also all kinds of stylus work with or without the mimeoscope, a lighted tracing machine. All kinds of artistic designs or sketches that are to be duplicated may be cut into the stencil and then be mimeographed. G.E. Pav. 3. P. 50.

Addressing and Multigraphing—An extensive aggregation of addressing machines, multigraph, duplicating machines and other office equipment that can be operated by inexperienced employees. G.E. Pav. 3. P. 50.

Safes and Time Locks—Home safes and electrically operated fire resistive and burglar proof safes. Also tear gas equipment. G.E. Pav. 3. P. 50.

OFFICE SUPPLIES

Pencils and Pens—Automatic pencils and fountain pens manufactured. Also featuring demonstration of adjustable pen points. G.E. Pav. 4.

Ink and Paste—Strange as it may seem, some of the things all of us use every day are the very things we know little or nothing about. We dip our pens in a fluid called ink. We reach for our paste jar or mucilage bottle. They are important tools of business. G.E. Pav. 3.

SOCIAL SCIENCES

Hall of Social Science noted as (H.S.S.); Federal Building (F.B.); Court of States (C.S.); Pages (P.) refer to Official Guide Book of World's Fair.

I. EDUCATION

A Century of Public School Progress—Chicago Public Schools and Phi Delta Kappa, ed. fraternity. Mural painting contrasting school of 1834 with school of 1934. Replica of Chicago's first log cabin school with 20 pupils alongside a model of the new Lane Technical High School with an enrollment of 7000 boys. H.S.S. 1st Fl.

Pre-School—The National College of Education. A model nursery school fully supplied with play equipment. H.S.S. 2nd Fl.

The American Public School, 1933—Chicago Public Schools. Illuminated illustrations of classrooms in the Chicago region. H.S.S. 2nd Fl. P. 91.

II. HISTORY

Ancient Egypt and Judea—Mode of Life. Models of Egyptian dwelling house (period from 1375 to 1350 B.C.) and of King Solomon's stables. Sumarian cult figures. The Oriental Institute of the University of Chicago. H.S.S. 2nd Fl.

Life of Prehistoric Indian—Collection of stone tools exhibiting evolution from 50,000 B.C. to 10,000 B.C. Mural paintings depicting mode of life. The Logan Museum, Beloit College. H.S.S. 2nd Fl.

Physical Anthropology—Race and sex differences in limb bones and skulls. Charts showing physical and mental development of child. Western Reserve University. H.S.S. 1st Fl. P. 91.

Ancient Rome—A frieze of translucent photo-murals portraying ruins indicating the appearance of ancient Roman government buildings. The Italian government. Italian Pav. 1st Fl. P. 22.

Mount Vernon Colonial Village—The outstanding features of this historical town are brought in full-sized reproduction. It includes colonial furniture, embroidery frame, Duncan Phyfe table, chairs and side tables by Sheraton and Chippendale, with demonstrations of hand weaving. In addition are found other early American landmarks such as Paul Revere's home, House of Seven Gables, Old North Church of Boston, and a colonial kitchen. 24th St. P. 117.

Modern History: See next chapter "Countries."

III. CIVICS

A—U. S. Executive Departments

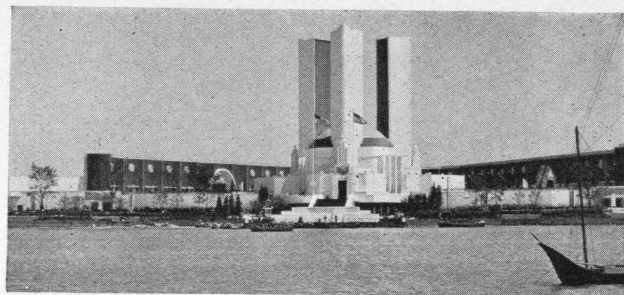
In Federal Bldg. (Court of States)

There is much material that can be used in the teaching of civics in the high school and elementary school. P. 75-81.

Federal Government (Situs)—A large model of the central area of Washington, D. C., showing existing federal buildings and future development recommended. The National Park and Planning Commission. F.B. 2nd Fl. S.W.

Executive departments are treated in chronological order of establishment.

Department of State—Documents showing procedure of legislation, presidential proclamations, executive orders, diplomatic correspondence and foreign ceremonial letters. A large map equipped with electric lights to show the location of diplomatic and consular offices throughout the world portrays the wide geographic range of the governmental contacts. F.B. 1st Fl. S.W. P. 76.



The Federal and States Group

Treasury Department—(On the hour demonstration) Bureau of mint, bureau of engraving, coin and bill presses, and cases of bonds, stamps, notes and bills. Hourly demonstration. Public health. F.B. 2nd Fl. E. 11-7.

War Department—Miniature lock and dam break-waters. Further exhibit of the War Dept. is Camp Roosevelt, which is a model example of a modern army camp. U. S. Army Corps of Engineers. F.B. 2nd Fl. N. 10-10.

Department of Justice—Bureau of Investigation. Souvenir finger prints, routine lantern slide description, crime statistics, crime laboratory, instruction of workers, model of U. S. detention farm, Bureau of Prisons, and treatment of prisoners. F.B. 2nd Fl. S.

Post Office Department—Materials used by those who try to defraud through the mails. Quack remedies advertised through the mails. Rogues' gallery of mail bandits. F.B. 1st Fl.

Navy Department—History, training and education of navy and marine corps. Moving pictures, machine gun, engines, bombs, flags, statues, war memorials, Croix de Guerre. Diorama of a typical seaport. F.B. 1st Fl. S.

Department of Interior—General information on national parks, moving pictures, Indian arts and crafts. Boulder Dam model. Geological survey and map. Alaskan dog team. Subsistence homestead. A branch of the department called the Office of Education, has a display called "Education—Yesterday, Today and Tomorrow." F.B. 1st Fl. N. E. Lect.

Department of Commerce—Bureau of Standards, Coast and Geodetic Survey, Bureau of Air Commerce. Patent Office. (C.S. S.W. 1st Fl.) Implements of history which were patented, history and types of patents. Navigation and steam boat inspection, Mines, Fisheries, Census, Light-house. Foreign and Domestic Commerce. F.B. 1st Fl. S.

Department of Agriculture—Chemistry and Soils. Conservation. Forestry showing moving models of miniature forests. Insects and pests. History of roads. Plant industry and quarantine, livestock, dairying, weather bureau, home economics, and agricultural engineering. F.B. 1st Fl. N. E. Lec.

Department of Labor—History of labor in U. S. by means of dioramas, maps and charts. History and development of population, machines, power, museum pieces, old implements, immigration, industry, economics, child labor, machine mural, miniature cases, housing, population. F.B. 1st Fl. N.

B—U. S. Bureaus and Commissions

Bureau of Narcotics—Opium pipes, dope holders, general lecture and discussion. F.B. 3rd Fl. E.

Public Health—Malaria fever display, safe and unsafe wells, disease charts, lighting problem, venereal disease, rat proofing vessel, quarantine. F.B. 1st Fl. S.

National Advisory Commission for Aeronautics—Miniature of largest wind tunnel for aeroplane testing, plane maneuvers, measure of air pressure and bumps, safety devices, research, miniature seaplane research tank, ship display, etc. F.B. 2nd Fl. E.

Government Printing Office—Picture book of binding process, plate making, ink manufacture, photo engraving. F.B. 2nd Fl. E.

Panama Canal—Miniature map model, pictures of canal zone. F.B. 2nd Fl. E.

Veterans Administration—Occupational therapy, articles made by invalids, statistics, demonstration F.B. 2nd Fl. E.

Library of Congress—Organization, reproduction, documents, pictures, etc. F.B. 2nd Fl. S.

Smithsonian Institute to Increase Knowledge—History of tools and display, magic medicine, murals, live lizards in natural setting, history of money, costume accessories, butterfly case, fossils, petrified wood, meteorite, heat shown in color, fluorescent minerals. Demonstration 10-8. F.B. 2nd Fl. S.

C—Local Government

Efficiency in Local Government—Dioramic presentation of improvements in the techniques of government. The short ballot contrasted with the long ballot. A city plan contrasted with city chaos. H.S.S. 1st Fl. P. 92.

IV. SOCIOLOGY, ECONOMICS AND SOCIAL WELFARE

The Family—A series of dioramas describes the changes in family life caused by the transformation of American economic and social life from an agricultural to a machine economy. The difference in the educational, religious, social, economic and recreational mores of the two periods are contrasted. H.S.S. 1st Fl.

Social Service—The State of Illinois in collaboration with 90 private agencies. The methods and results of the work of social service agencies are exhibited. Special booths are reserved for individualized care and for family service. A detailed yet readable chart portrays a century of progress in social legislation. H.S.S. 1st Fl. P. 92.

Progress of the Worker—Dioramas portray the change in status of labor. In the agricultural and small trades area he works individually and independently. The advance of machine and large scale production enslaves the laborer until by means of cooperation the laborer is again free. H.S.S. 1st Fl. P. 91.

Partnership of Government with Labor and Industry—The story of inflated prosperity, depression, unemployment, starvation and finally the intervention by the government to save the situation is told in a series of graphic dioramas. H.S.S. 1st Fl. P. 91.

The Immigrant—Dioramas analyze the process of Americanization. The immigrant brings with him from the home land the habits and customs of the home land. Gradually he becomes acclimatized to his present environment. The merging of the old and the new produces a richer life and contributes to the ever-developing American civilization. H.S.S. 1st Fl. P. 91.

Slum Reclamation—Federal Housing Project. Dioramas depict the interior and exterior of slum tenements and in contrast the results of rehousing projects. Photographs and maps of slum clearance projects. H.S.S. 1st Fl.

Racial Progress—Wilberforce University. Exhibit depicts works accomplished at Wilberforce University. H.S.S. 2nd Fl.

Let Us Substitute Law for War—The Chicago Youth Peace Council & Local Citizens' Committee. Diorama and chart representation of the expense of war. H.S.S. 1st Fl.

GEOGRAPHY AND HISTORY

Court of States noted as (C.S.), Hall of Science (H.S.), Pages (P.) refer to the Official Guide Book of the World's Fair.

STATES

Arizona—The atmosphere of an adobe trading post permeates the exhibit. Indian craftsmen are seen at work. A silversmith, a potter, a rug maker, and a basket weaver perform their tasks before the visitor. An excellent display of cacti in a desert setting. C.S. P. 82.

California—Entry to the California exhibit is gained through a 12 ft. arch in a redwood log. Huge redwood trunks are on display throughout the exhibit. Large dioramas of Los Angeles and San Francisco. Game, fish and fruit display. C.S. P. 83.

Carolina—In a mountain setting stands a mountain cabin. Homespun cloth rugs, coverlets, hand-made pottery and hammered pewterware on display. C.S. P. 122.

Florida—Designed in the style of a Spanish courtyard. Excellent dioramas display the Florida industries and Florida outdoor garden contains dozens of varieties of palms and southern plants. C.S. P. 83.

Georgia—Dioramas of fruit orchards and cotton fields. In a realistic cotton field a quartette of Negroes sing old-time spirituals. Models of Indian mounds at Macon. Paintings of Warm Springs. C.S. P. 84.

Illinois—Host Building, a comprehensive historical collection. Exact reproduction of the parlor of Lincoln's Springfield, Ill., Home. 72 original documents and photostatic reproduction of others. Relics of Lincoln's life in Illinois. Avenue of Flags. P. 20.

Illinois Resources, Location and Industry—Minerals, industry, engineering, architecture, mathematics, chemistry, historical survey, architectural murals. C.S. N. 1st Fl. P. 84.

Lincoln Group—Biography of Lincoln, Birthplace, Hodgenville, Ky. Ind. Family home, Little Pigeon Cr. General Store, New Salem, Ill. Rutledge Tavern, New Salem. Wigwam, Chicago. Relics of early days. Street of Villages. P. 82.

Fort Dearborn—Reproduction of fort and stockade. Flag of 15 stars and stripes of 1812. Relics of furniture. Indian trading post, supplies. Brass cannon, 1804 (one made in Paris, 1793). Historical documents. Street of Villages. P. 121.

De Saible Cabin—A reproduction of cabin of Jean Baptiste. Pointe De Saible, first permanent building on site of City of Chicago. Street of Villages. P. 82.

Illinois Agricultural Building—Typical quarter section farm 100 years ago, 50 years ago and today. Dept. of Agric. U. of Illinois. Northerly Island. P. 69.

Indiana—Bizarre murals depict Indiana's history.

Missouri—A Taney County pioneer log cabin. Painting of Missouri's first settlement in 1700. Bronze figures of Tom Sawyer and Huckleberry Finn. C.S. P. 84.

New Mexico—Typical Pueblo Indian house. Two story modern dwelling showing how architects have made use of Pueblo style. Display of prehistoric Indian relics and of weapons used by Spanish conquistadors. Paintings. C.S. P. 85.

New York—Large translucent photo-murals of New York skyscrapers and of Niagara Falls display the natural and man-made points of interest in the state. C.S.

Ohio—Murals throughout the exhibit and short terse paragraphs on the back of each settee scattered through the hall relate the history of the state. A large map with electric equipment that can be manipulated by the visitor exhibits the production, industry and location of cities within the state. C.S. P. 85.

South Dakota—Model of Mount Rushmore shows progress of work on mountainside memorial. Cyclorama of farm and water scenes in contrast with rugged scenery of the Bad Lands and Black Hills. C.S. P. 86.

Tennessee—Smoky Mountain and other scenes of beauty and grandeur. Development shown as results of operations of the Tennessee Valley Authority. C.S. P. 86.

TERRITORIES

Alaska—An Alaskan cabin contains an exhibit of dog sledges, Eskimo fur clothing, skins of Arctic animals and Eskimo weapons and relics. Alaskan Cabin. Charge. P. 88.

Puerto Rico—Educational progress and the development of sanitation and disease control are illustrated. Native manufactures are exhibited. C.S. P. 86.

Virgin Islands—A house made of cocoanut leaves set in a tropical garden forms the center of the exhibit. Native girls weaving reeds into mats and baskets demonstrate the reed work for which the islands are noted. Wall maps and mural paintings give further views of the island. C.S. P. 87.

FOREIGN COUNTRIES

The villages are located on the Street of Villages in the vicinity of 26th St., with the exception of the Dutch Village which is on the Midway.

Belgium—Well known historic structures have been reproduced, including the famous gate of Ostend, the old French-Gothic Church of St. Nicholas at Antwerp and one of the city gates of mediaeval Bruges. Throughout the village are cobbled streets and many high gabled houses. On the village green folk dances are given afternoons and evenings. In one of the shops Belgian laces are produced and the procedure explained. Belgian Village. Charge. P. 112.

Black Forest of Germany—German country life in the Black Forest region during the winter season is depicted. In shops and village houses German home industries are carried on, as in the home country. Ice skating exhibitions are given on a skating pond in center of village. Black Forest Village. Charge. P. 122.

Merrie England—Elizabethan England—The village portrays life of the time of Queen Elizabeth. The trial of Mary, Queen of Scots, before Queen Elizabeth is held on the village green. With all the atmosphere of old England, Shakespearean plays are produced in the Old Globe Theatre. Merrie England. Charge. P. 119.

Ireland—The village contains several thatched cottages and a large hall. A west coast lighthouse is reproduced. Historical exhibits include a twelfth century Irish harp, Irish records dating back to the 8th century and the Book of Kells, oldest history known to Irish literature. Weavers demonstrate the making of Irish linen, poplin and laces. Irish Village. Charge. P. 120.

Italy—Reproductions of Italian houses and shops. A campanile from the gateway of San Gignano and the 13th century leaning garrisenda tower of Bologna have been realistically reproduced. Italian Village. Charge. P. 120.

Included in the Italian government exhibit is a miniature Venetian glass factory, wherein Italian artist-craftsmen ply their trade. Charge. The Italian Pavilion contains large translucent photo-murals, showing Roman ruins, also present day Rome. Italian Pavilion. Avenue of Flags. P. 22.

By means of a model of the port and buildings of Rome at the time of the Caesars, is exhibited the beginning of scientific city planning and construction by the Romans. Scale models of antique Roman aqueducts, military roads and a pleasure galley of Caligula are also on exhibit. Modern Italy is exhibited by means of models of Alpine tunnels and of pioneer electric installations. H.S. N.E. P. 29.

Spain—Castles dating from the 16th, 17th and 18th centuries have been reproduced. The village also contains reproduction of the Monastery of Poblet. This monastery houses a shrine of the virgin of Pilar. Native occupations, arts and crafts are exhibited. Spanish Village. Charge. P. 116.

France—A large world-war panorama 402 ft. long and 45 ft. high portrays war scenes in France. Pantheon de La Guerre. Charge. 25th St. P. 114.

Greece—Paintings, statues, photographs and dioramas show the development of the century. A commercial exhibit of Greek products. Republic of Greece Hall. C.S. P. 88.

Czechoslovakia—Exhibits show the attractions of celebrated health resorts. Presentation of genuine and profusely diverse native arts and crafts. Czechoslovakian Pavilion. Avenue of Flags. P. 22.

Sweden—The high spots of the exhibit in the Swedish Pavilion are an excellent collection of modernistic furniture manufactured in Sweden and an extensive collection of the famous Swedish glassware. Swedish Pavilion. P. 21.

Denmark—Murals of picturesque Danish urban and rural scenes. Two historical astronomical observatories of Tyho Brahe shown in scale models. H.S. 1st Fl. N. P. 30.

Egypt—Native Egyptian craftsmen produce slippers, tapestries, cigarettes and art objects. The Egyptian Government. Isl. S. 22nd St.

China—The Teakwood Gate of Honor standing before the Pavilion and Chinese garden is an example of a Chinese ceremonial arch. A jade pagoda is the central feature of a jade collection. The pagoda is a product of more than sixteen years of labor and is valued at \$500,000. Within the pavilion are several Chinese shops and a Chinese theatre wherein performances are given by troupes of native artists. Chinese Pavilion. P. 26.



The Golden Temple of Jehol

The Golden Temple of Jehol is an exact reproduction of the original temple, built for the Manchu Emperors of China 1767. This Temple is the result of research by Dr. Sven Hedin. A treasure of statuary, carvings, jewels, bronzes and rich embroideries may be seen within the Temple. Dr. Hedin was sent to the Orient by Vincent Bendix, Exposition trustee, to find and bring back a typical Lama Temple. His quest was ended when he found this brilliant relic of the Manchu dynasty. It was crumbling to ruin, but a staff of Chinese artist-craftsmen was set to work to duplicate each piece of the structure. The Lama Temple. 16th St. P. 24 (Charge).

Mexico—Authentic replicas of Mexican buildings and furnishings. Native craftsmen are employed at their trades within the Village. Mexican Village. P. 107.

Central America—A reproduction of a section of the Maya Temple, the nunnery of Uxmal, in Yucatan. Within the temple are relics of the artistic and engineering genius of this lost civilization of America. A tomb of a Mayan chief built into one wall of the temple is lined with some of the finest Mayan relief sculpture. Maya Temple. 31st St. P. 138.

LECTURES, DEMONSTRATIONS AND CONCERTS

DAILY PROGRAM

There is no admission charged for these events unless the word "Charge" is noted.

- 9:00 History—Fort Dearborn, Chicago as it was. Villages. 26th St. (Charge).
- 9:00 Geography—Lama Temple, China 18th Century. Chinese Pav. 18th St. (Charge).
- 9:30 Art—Tour of Painting galleries. Private guide service furnished on request. Art Institute, Michigan Blvd.-Adams St. (Charge).
- 9:30 Astronomy—"The Drama of the Heavens" lecture, 10:00 A.M., 40 minute intervals. Adler Planetarium, 12th St. (Charge).
- 9:30 Auto Mechanics—General Motors Theatre. General Motors Bldg. 31st St.
- 10:00 Electricity—Central States. Exhibits. Power Diorama. Lectures by recording and practical demonstration. Electrical Building, Island, 18th St.
- 10:00 Electricity—Western Union. Moving picture on laying of Trans-Atlantic cable. Starts on half hour, lasts 15 minutes. Electrical Building, on Island, 18th St.
- 10:00 Industry—Olson Rug Co. Reweaving of rugs from old materials as carpets, rugs, etc. Demonstration on loom. Electrical Building, Island, 18th St.
- 10:00 Industry—Olson Rug Co. Lecture and demonstration on manufacture of rugs. General Exhibits Building, 18th St.
- 10:00 Medical Arts—Belgard-Spero, Inc. House of Vision Movie "Seeing how you see." Hall of Science, 18th St.
- 10:00 Food and Nutrition—Wisconsin Alumni Research Foundation. "Rags to the Rescue." Importance of value of Vitamin D. Hall of Science, 18th St.
- 10:00 Food and Nutrition—Abbott Laboratories. Vitamins for Health, describing A and D on hour and half hour. Hall of Science, 18th St.
- 10:00 Chemistry—Union Carbide and Carbon Corp. Linde Liquid Air demonstrations every half hour. Science Theatre, Hall of Science, 18th St.
- 10:00 Science—Walgreen's Movie Theatre. Laboratory showing Ice Cream Plant, Hall of Science, 18th St.
- 10:00 Technical Arts and Processes—Demonstration, diamond mining, cutting and polishing. General Exhibits Bldg., 18th St. (Charge).
- 10:00 Zoology—Frank Buck's show of wild quadrupeds, reptiles and birds. Northerly Island, 12th St. (Charge).
- 10:00 Botany—Flower Show. Horticultural Building on Island, 19th St. (Charge).
- 10:00 Art—Chalice of Antioch, painting relics, antiques. Hall of Religion, 20th St. (Charge).
- 10:00 Geography—Slim Williams' exhibit of malamutes or huskies, sled dogs. Alaskan Cabin, east of Court of States (Charge).
- 10:00 Electricity—Demonstration of wired television. Television Bldg. Electrical Group, Island, 18th St. (Charge).
- 10:00 Technical Arts and Processes—Demonstration of packing and dried-beef, Armour & Company. Armour Bridge, 16th St.

- 10:00 Technical Arts and Processes—Glass-blowing and making of Venetian articles. Part of Italia, 14th St. (Charge).
- 10:00 Transportation—Roads of the World—Reproduction in 2,000 foot oval of 21 historic highways: Ford Gardens, 31st St.
- 10:00 Art—Daily lectures, Art Institute. See newspapers for topics. Also at 11:00 A.M., 12:30 and 2:30. (Charge.)
- 10:00 History—Lincoln Exhibit, Illinois Host House—Avenue of Flags.
- 10:00 Commercial Arts—Growth of Mail Order House Enterprise. Sears Roebuck Bldg.
- 10:00 Chemistry—Wander Company—Chemistry of Digestion. Every half hour. Hall of Science.
- 10:00 Chemistry—Merck and Company—Chemical gardens planted. Hall of Science.
- 10:00 Technical Arts and Processes—Haeger Pottery, complete demonstration of pottery making from early Indian method to present day machine era. Haeger Pottery (Charge).
- 10:30 Technical Arts and Processes—Movie of assembling car. 35 minute intervals. Ford Theatre. Ford Bldg., 31st St.
- 11:00 Technical and Industrial Arts—Radio-controlled tractor and binder-twine process. International Harvester exhibit. Food and Agricultural Bldg., Northerly Island, 12th St.
- 11:00 Electricity—Willie, the vocalite robot; short-wave sound transmission; Playground of Science (gallery) Westinghouse exhibit, Electrical Bldg., half-hourly.
- 11:00 Art—Tour of art-galleries for children, conducted by Helen Mackenzie, Art Institute (Charge).
- 11:00 Electricity—"House of Magic" research laboratory demonstration. General Electric exhibit, Electrical Bldg. Half-hourly.
- 11:00 Science—Technical & Industrial Arts—Motion-pictures, with tight-wire exhibition hourly by Rosina Nelson. Theatre of Goodyear Tire and Rubber Co., 35th St.
- 11:00 Science & Industry—Talking movies, 2:00 P.M., 4:00 P.M., 7:00 P.M. Hall of Science.
- 11:15 Food and Nutrition—Demonstration certified milk process "From Cow to Bottle." Brookhill Farm, 35th St.
- 12:00 Electricity—Domesticating electricity: Theatre of Westinghouse Exhibit, Electrical Building. 15 minute intervals.
- 12:00 Electricity—"Romance of Lamps and Lighting": General Electric exhibit, Electrical Bldg. Half-hourly.
- 12:00 Transportation—showing original and progress of locomotive, 30 min. intervals. C. N. W. R. R.—Travel and Transport Bldg., 33rd St.
- 12:10 Household Economy—Kelvinator Sales Corp. Marionette Show—"From Cave to Kelvinator," showing history of food preservation. Electrical Bldg. Every 45 min. to 9:10 P.M.
- 12:30 Electricity—Clarence E. Willard, "The Man Who Grows": Kelvinator crystal stage, Electrical Bldg. Two-hour intervals.
- 12:30 Food and Nutrition—Demonstration of slicing and packing bacon: Wilson & Co.'s Pavilion, Foods and Agriculture Bldg., Northerly Island, 12th St.
- 1:00 History—Exhibit, Mexican Government's collection of native curios, Mexican Village, Northerly Island, 22nd St. (Charge).

- 1:00 Music—Organ Recital by Jesse Crawford: Swift Bridge, 23rd St. 2:30-3:15; 5:45-6:30; 7:00-7:45.
- 1:00 Music—Sea Island Singers: Georgia exhibit, Hall of States. Hourly.
- 1:00 Technical and Industrial Arts—Demonstration, with lecture, processing rubber: Van Cleef Exhibit, Electrical Bldg.
- 1:00 Science—Hall of Photography—Home Movie Theatre. Half hourly. Kodacolor showing. 2:00, 4:00 and 8:00 P.M. Hall of Science.
- 1:15 Food & Nutrition—H. J. Heinz Co.—Comedy Skit. Heinz's strained vegetables for baby. 2:00 P.M., 3:00-5:30, half hourly. Hall of Science.
- 1:30 Technical & Industrial Arts—Chevrolet, demonstrating assembling of complete automobiles: General Motors Bldg.
- 2:00 Shakespearean Plays. Old Globe Theatre, Merrie England. Street of Villages, 26th St. Also at 3:00, 4:00, 5:00, 7:30, 8:30, 9:30. (Charge.)
- 2:00 History—American colonial dances, collections, replicas, etc. Colonial Village (Charge). 5:00, 8:30, 10:00.
- 2:00 Electricity—Radio Corporation of America—Assembling and manufacture of radio tubes, no lecture. Manufacture of victrola records, continual demonstration with lecture. Electrical Building.
- 2:30 Transportation—"Wings of a Century"—Romance of transportation, 4:00, 7:00, 8:30. 35th St. (Charge).
- 2:45 Music—Recital by Albert D. Jones on Deagan Carillon, official chimes of A Century of Progress: Science Theatre.
- 3:00 Music—Charles Stein, demonstration of electronic-wave musical instruments, Theremin and Emicon: Science Theatre.
- 3:40 Phenomena of sound in demonstration, Magnavox Co. and Electro Acoustics Products Co. Science Theatre. (Till 4:00; 8:00 and 8:15.)
- 4:00 Transportation—Wings of a Century—Romance of transportation. 35th St. (Charge).
- 5:00 Music—Charles Stein, demonstration of electronic-wave musical instruments, Theremin and Emicon: Science Theatre.
- 6:00 Radio—Amateur Radio—Short-wave radiophone demonstration: Science Theatre (Till 6:30).
- 7:00 Transportation—Wings of a Century—Romance of transportation. 35th St. (Charge).
- 8:30 Transportation—Wings of a Century—Romance of transportation.
- 9:00 Astronomy—The Arcturus ceremony and telling time by stars, being vivid demonstration of applied astronomy, Elgin Observatory: Science Theatre (Till 9:15).
- 9:15 Electricity—Western Union's demonstration of music by telegraph, with Deagan chimes: Science Theatre (Till 9:30). Hall of Science.
- 9:30 Chemistry—Chemistry demonstrations, Union Carbide and Carbon Corp. Science Theatre (Till 10:00).
- 10:00 Music—Recital of Compositions for Thomas Wilfred's Clavilux (color organ). Science Theatre (Till 10:15).

SUGGESTED ITINERARIES

In the Grounds of A Century of Progress Exposition



The General Exhibits Building

The sections of study as outlined in this booklet, are grouped in four general groups of buildings: The Hall of Science and General Exhibits cover the natural and basic sciences, the study of man, technical arts and processes, and business and commerce.

The Social Science building and Hall of States cover fine arts and music, countries and travel, social science and communications.

The Home Planning Hall and Model Homes cover home planning and economics, while the subjects of transportation are located at the south end of the grounds.

The guides in these various buildings are particularly instructed to be of aid to these student tour parties in seeing that they keep going in the right direction, and that they travel between one group and the other in the minimum amount of time. With the aid of a ten cent bus fare, it is possible to cover the entire grounds with a minimum of fatigue. Some suggested itineraries are as follows:

ELEMENTARY CHILDREN

Grade school children will do well to enter the grounds at the 18th street gate and visit the Hall of Science and the General Exhibits group.

In the Hall of Science the sculptured reproduction of the Country Doctor, the Transparent Man, and the Rand McNally collection of elements of the earth will be of particular interest. In the General Exhibits, rug weaving, printing, both ancient and modern, and some of the manufacturing processes. Proceed south in the main avenue to the Sinclair Prehistoric Animals; then continue south and across the 23rd street bridge to the Island, and north on the Island to the Electrical building.

In the Electrical building, of particular interest are Willie Vocalite, the mechanical robot, and the story of illumination and lamps. Continuing north in the group to Western Union Hall will be found a simplified explanation of the way telegrams are transmitted; north again in the group to the Hall of Social Science where are found the life masks of famous Americans. Continuing still north on the

Island, much of interest for elementary children can be found in the New Mexico and Florida State exhibits; and two or three of the exhibits in the Federal building, including the census bureau and a simplified explanation of world commerce. At this point a bus may be boarded to make a circle of the grounds to the Travel and Transport building. In this group the elementary school children will find of interest the streamline trains, the vehicles of the past and present, and numerous historical dioramas of American life.

HIGH SCHOOL TOURS

The itinerary of these High School tours will be primarily determined by the subject or subjects which the group comes in particular to study. For those interested in basic science and business subjects, a tour of the Hall of Science and General Exhibits group can be followed by a trip over the bridge and through the Electrical and Social Science buildings; then north to the Court of States and Federal building. At this point a bus may be boarded to take them to the south end of the grounds for the automotive and transportation exhibits.

For those primarily interested in Social science, music, fine arts and travel, the grounds could be entered at 12th street, and then proceed across the 12th street bridge to the Island, south on the Island to the Court of States; then to the Social Science and Electrical groups, and across the 16th street bridge to the Hall of Science and the General Exhibits. At this point a bus may be boarded for the south end of the grounds.

For those groups primarily interested in Transportation, a tour can be started from the south end of the grounds, coming north to the basic science and business sections; then to the Island for the Social Science, Communications and Travel sections.

PLANNING ITINERARIES

The Student Tour Department will be glad to furnish a specific itinerary for the conductor, if you will write in and name the subject or subjects on which you desire to lay particular emphasis. On this basis, we will work out a suggested itinerary for those subjects, and also include a general tour of the grounds.

This applies to elementary schools, high schools, and to adult education class tours.

SUGGESTIONS ON ELEMENTARY TOURS

1. Students from the 3rd grade can tour on some subject like transportation, but in general they are best adapted to children above the 3rd grade.
2. Detail one student to report at the school assembly.
3. Make report to Principal as shown below.

The following report form has been used on previous tours to record the educational values of the trip. Through this data from the various excursions, plans can be readily prepared in future years.

1. Date (morning 3½ hours)
2. Destination
3. Unit of work (one unit coordination)
4. Estimated time
5. Preliminary arrangement
Transportation
Guides
Executive, i.e., passenger agent visit to the place
6. Write report next day or discussion
7. Educational value

RECREATION AND AMUSEMENT

(Page references are to further description in the Official Guide.) Locations are chiefly by streets.

Note to Teachers

Teachers who desire to visit any of the amusements or points of interest for which there is a charge, should contact the concessionaires for rates for groups of students.

The director of concessions has informed concessionaires of Student Tours and requested the best possible reduced rates arranged on request of teachers or principals. Many special 5c rates have been made for students where regular rate would be 25c. The prices vary considerably so that no general statement can be made on flat rates.

FREE FEATURES

A Century of Progress Fountain—Largest fountain ever constructed extending 670 feet south from the Planetarium Bridge into the center of North Lagoon. 68,000 gallons of water flow through its outlets per minute. Beautiful color display at night by means of submarine lights. 12:00, 5:45, 8:00, 9:30. P. 61.

Swift Bridge and Open Air Theater—Musical entertainments, sports exhibits, afternoon and evening concerts. 23rd St. P. 108.

Lagoon Theater—Musical and stage entertainments. Police Band and All Star Circus. 2:00, 6:45, 8:45 daily. 14th St. P. 20.

Barney Oldfield Feats on Track—Free exhibition of automobile driving and testing given hourly under the direction of Barney Oldfield, the celebrated racing driver. Chrysler Building. 31st St. P. 142.

Lions and Tigers in Wild Beast Exhibit—Free exhibition of thirty-three jungle-born lions and tigers and their trainer in a daring performance. There are 2,500 free seats in the outdoor theater around the steel-barred arena, called the "Red Crown Cage of Fury." 3:00, 5:00, 8:45 daily. 31st St. P. 144.

Ford Gardens—Musical entertainment daily at 2:00 and 8:00. 31st St. P. 135.

ADMISSION FEE CHARGED

On Northerly Island

The Enchanted Island—Here you will find Magic Mountain, Airplane Ride, Adventure Land, Buck Roger's Theater, Punch and Judy Shows, Hedge Maze, Pony Rides, Children's Theater. South on Island. P. 103. Free admission to area.

Beach Midway—Come here "just for fun" and find the Carnival, Thrilling Rides, Mechanical Circus, Freak Animal Show, Frank Buck's "Bring 'Em Back Alive", Down Lost River, Torture Show, and the Bug Ride. P. 70.

Villages: See Dutch and Mexican below.

On The Mainland

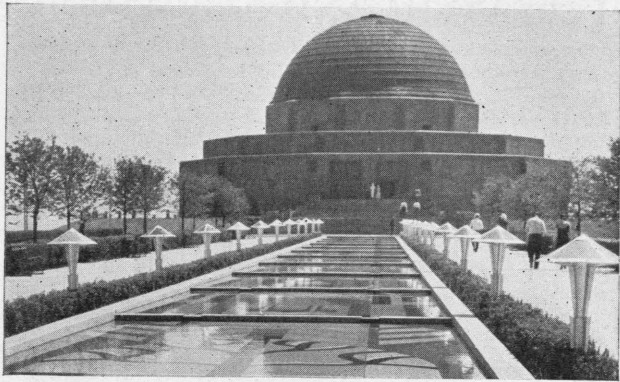
The Sky Ride—The spectacular steel web towers of the Sky Ride, rising 628 feet in the air, are the highest man-made structures west of the Atlantic Coast. At their tops are observation platforms from which is obtained a thrilling view of the Exposition. The Sky Ride illumination is a breath-taking spectacle. South end of the Avenue of Flags. P. 24 and 89.

Flying Turns—A thrill coaster ride, without rails, around safely banded turns. 23rd St. P. 118.

Ripley's Believe-It-Or-Not—Odditorium. Show of incredible truths, wonders and paradoxes, illustrating Ripley's cartoons. 26th St. P. 123.

Villages

All villages listed on P. 22-23 provide amusements of varied and characteristic nature.



The Planetarium

LOCATION OF BUILDINGS

Adler Planetarium (North end of Island)
 American Radiator & Standard Sanitary Corporation (South of General Exhibits)
 American Legion Bldg. (South of Home Planning)
 Armour & Co. (16th St. Bridge)
 Bendix-Lama Temple (16th St.)
 Brookhill Laboratories (34th St.)
 Chinese Pavilion (West of Hall of Science)
 Christian Science Monitor (Opposite General Exhibits)
 Chrysler Building (South of 31st St. Entrance)
 Court of States (16th St. on the Island)
 Crane Co. (27th St. in Model Home Group)
 Crystal House (Island North)
 Czechoslovak Pavilion (Avenue of Flags)
 Electrical Bldg. (17th St. on the Island)
 Federal Bldg. (16th St. on the Island)
 Firestone Tire & Rubber Co. (23rd St.)
 Food and Agriculture Bldg. (14th St. on the Island)
 Ford Motor Co. (28th to 31st Streets)
 Fort Dearborn (27th St.)
 Frigidaire House (at General Motors Bldg.)
 General Cigar Co. (23rd St.)
 General Exhibits Bldg. (19th St.)
 General Motors Co. (31st St.)
 Good Housekeeping Bldg. & Gardens (20th St.)
 Goodyear Tire & Rubber Co. (34th to 35th Sts.)
 Hall of Religion (25th St.)
 Hall of Science (17th St.)
 Haeger Potteries, Inc. (26th St. Model Home Group)
 Home Planning (28th St.)
 Horticultural Bldg. (Island South)
 Illinois Host House (Ave. of Flags)
 International Harvester Co. (North end of Island)
 Johns Manville Corporation (27th St. Model Home Group)
 Kohler Company (27th St. Model Home Group)
 Lost and Found in General Exhibits Group (19th St.)
 Owens Illinois Glass Co. (27th St. Model Home Group)
 The Social Work Exhibits Comm. (rear Court of States)
 Sinclair Refining Co. (20th St. & Leif Erickson Dr.)
 Sears Roebuck & Co. (Avenue of Flags)
 Social Science Hall (16th St. on the Island)
 Standard Oil Co. (32nd St. opp. T. & T.)
 The Texas Co. (Havoline Tower) (23rd St.)
 Time Magazine, Inc. (South of Hall of Science)
 Time & Fortune Bldg. (18th St.)
 Travel & Transport Bldg. (33rd St.)
 Hiram Walker & Sons, Inc. (16th St. Bridge)
 Wilson & Co. Stable (South of Wings of A Century)
 Wonder Bakery (North end of Island)

CHICAGO EDUCATIONAL CENTERS

Adler Planetarium—For an extended description of this remarkable astronomical museum see Astronomy (page 1). Exposition Grounds, Northerly Island. Admission 25c. 9:30 A.M. to 10 P.M.

The Art Institute—Seventy galleries on the first and ground floors, free; forty-three galleries of painting and sculpture on the second floor, 25c. Print exhibition, with 412 exhibits, free. Lectures on the exhibition every day in Fullerton Hall. Exhibition of World Masterpieces. Michigan Blvd. at Adams St. 9 A.M. to 5:30 P.M.

Chicago Museum of Natural History—Exhibits of birds and mammals which once abounded in the Chicago Region. The Chicago Environs groups with enlarged photographic background nearly ninety-five feet in length, are among the outstanding exhibits. Lincoln Park at Clark and Center Streets. Admission, free daily. Hours, week days, 9:00 to 5:00; Sundays, 1:00 to 5:00.

Chicago Historical Society—The story of the rise of the United States from the early Spanish exploration to the present time in 38 chronological period rooms. Special series on the history of Chicago and the old northwest territory. One of the most important Lincoln collections in the world. Loan LaFayette Centenary Exhibit, Lincoln Park. N. Clark and W. North Ave. 25c admission. Free on Monday, Wednesday and Friday. 9:30 A.M. to 5:00 P.M. Teachers and students free always.

Chicago Public Library—Visit the following departments: Reference, Periodicals, Civics, Patents, Art and Music. Also see the special department of books for the blind. Michigan and Washington Sts. 9:00 A.M. to 10:00 P.M. Free daily.

Field Museum of Natural History—A classic structure housing rare collections of plant, human and animal life from all parts of the world. Special guides will conduct parties throughout the various departments. See Halls showing Plant Life, Minerals and Prehistoric Exhibits of Primitive Civilized Peoples, Groups of Animals displayed in their native environment, collected by Roosevelt and other famous expeditions. Lake Michigan and Roosevelt Road. 9:00 A.M. to 5:00 P.M. daily. Children free always. Adults, 25c. Free on Thursday, Saturday and Sunday.

Museum of Science and Industry (Rosenwald Museum)—A unique collection of industrial machines showing processes of modern industry that can be operated by the visitor to show their value and use in everyday life. The scientific apparatus demonstrating basic principles, historical exhibits in industry, exhibits covering courses of study in science, electricity, power and communication, industry, geology and mining. Full size operating coal mine lowering visitors into workings to see mining operation. Charge, 25c (children 10c) to the Coal Mine. Free entrance to the Museum daily from 10:00 A.M. to 6:00 P.M.. Free guide service. 57th St. and Lake Michigan, Jackson Park.

Oriental Institute—Research laboratory for the investigation of early human career. Five exhibit halls displaying objects from Egypt, Palestine, Syria, Anatolia, Iraq, and Persia. University of Chicago, 1155 E. 58th St. Free. Open 10 A.M. to 5 P.M. daily. Sunday 11 A.M. to 5 P.M.

Shedd Aquarium—This is the largest and finest equipped institution of its kind. Collection of 10,000 specimens representing 250 distinct species. In Grant Park, Twelfth St. on Lake Michigan. 10-5 daily. Children always free. Adults free, Thursday, Saturday, Sunday; other days, 25c.

Zoos—Chicago Zoological Park, Brookfield. Extensive groups of animals confined without cages. Free Thursday, Saturday, Sunday. Other days, admission: adults 25c, children under 15 free. Grounds open daily 9 A.M. to 7 P.M.; building from 10 A.M. to 6 P.M. 22nd Street car service to gate.

Lincoln Park Zoo. Free. Buildings open from 9 A.M. to 5 P.M. daily.

GENERAL INFORMATION

A Century of Progress will furnish information concerning housing accommodations and reservations in connection with these Student Tours. The number for whom lunches on the grounds are desired should be reported as far in advance as practical. A Century of Progress is anxious to be of every possible assistance in helping you plan your tour.

TRANSPORTATION

Consult your nearest railroad or electric line passenger agent, or bus line operator as to special rates, schedules, and transportation facilities available for the carrying of groups to Chicago.

When plans are completed as to mode of travel, advise the Student Tour Section by letter, and we will co-operate as to information on routes and entrances to the Exposition grounds.

Within the Exposition grounds there is every variety of inexpensive transportation for the longer distances. Children under 12 for 5c and adults for 10c can travel the entire length of the grounds and other modes of conveyance are in proportion.

ADMISSION TO GROUNDS

The teacher or conductor of the tour party of ten or more will be admitted to the grounds free. All student members will be admitted at a rate of 5c each. Any other members of the group will pay the regular admission fee of 50c per person.

LODGING AND MEALS

For those parties remaining over night, rooms will be provided by the YMCA Hotels at 75c, 85c and \$1.00 per person. Several of these hotels provide for mixed groups. The members of the North Shore Hotel Association will provide rooms at \$1.00 per person, per night. Arrangements may be made for private home accommodation through the Room Reservation Bureau, which is sponsored and indorsed by the Chamber of Commerce. These hotels have dining rooms and cafeterias in connection and it is possible to secure a varied menu at a very reasonable price.

SPECIAL GUIDE TOUR SERVICE

The official guides of A Century of Progress are receiving special instructions in connection with assisting teachers on the Student Tours. The guides will lend every possible assistance to make the tours successful.

Should any tours, however, feel they will need a special guide, one will be assigned to the party at a low rate per hour provided arrangements are made at least 24 hours in advance.

Trained Exposition guides in uniform are everywhere in the grounds and buildings. They will direct you wherever you wish to go.

FACILITIES

A Century of Progress offers many facilities for the convenience and comfort of these Student Tours. The grounds are dotted with free rest rooms and benches. There is a general post office. Check rooms, and checking facilities are available at the various points on the grounds. The Travelers Aid Society maintains an office at the 23rd Street Entrance. An emergency hospital is located in the Hall of Science, and special guide and police service is maintained at all times. All parts of the city may be reached from transportation which is available at all gates. The grounds may be reached in a very short time from any of the housing accommodations provided for these tours. Facilities are also available for the cashing of money orders and traveler's checks. A Lost and Found Bureau is located in the General Exhibits group.

Suggested Reports on Student Tours

The Student Tour Section of A Century of Progress would appreciate a copy of answers to these questions sent to Room N202 at the Administration Building, Burnham Park, Chicago.

- a. What exhibits, lectures, and demonstrations did you see and hear?
- b. Name the three best displays in order of preference.
- c. Were there any demonstrations that were too difficult to understand?
- d. Could you get up in class and explain accurately a process or demonstration that you have seen? If so, which one?
- d. Have you any suggestions for the planning of future trips—where to go, what to omit, or any changes in general arrangements?

STUDENT TOURS
to the
CENTURY OF PROGRESS
EXPOSITION

Chicago, 1934

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The Travel and Transport Building

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*“And Step by Step Since Time Began
I See the Steady Gain of Man.”*

—WHITTIER
