

AN INTERNATIONAL EXHIBITION OF INDUSTRIAL SCIENCE.

An International Exhibition of the Sciences applied to Industry will be held in the Palais de l'Industrie, Paris, from July 24 till November 25, 1879.

The President of the Superior Committee is M. Cocherie, Under Secretary of State at the Ministry of Finance; the Secretary-General, M. De la Bruyère, Administrateur de la Caisse d'Épargne de Paris; and the Director, M. P. Nicole, Administrateur Général de l'Union Syndicats de Paris, who organized the Havre Exhibition in 1867, and the Exposition Maritime et Fluviale in 1875.

The scope of the Exhibition can best be appreciated from a summary of its programme, for which we are indebted to Messrs. Emile Caspar & Co., sole agents for the United States and Canada, 73 Great Tower St., London, E. C. The programme comprises 9 groups, with 69 classes, as follows:

GROUP I. relates to *Prehistoric Knowledge, Anthropology, and Education*.—Class 1 embraces ethnographical collections, illustrating the life of primitive man and modern savages, with specimens of prehistoric habitations, while, by way of contrast, Class 2 will contain specimens of various industries at the present day, showing the life of civilized beings in different countries. Class 3 is devoted to ecclesiastical art, and Class 4 to education and instruction, comprising schools for the deaf and dumb and blind; trade—commercial and agricultural—schools; the higher education, and apparatus and methods of instruction.

GROUP II.—*Applied Physics*.—Class 5 includes all the more recent applications of electricity, and the electric light; Class 6, the electric telegraph, with the various transmitting and receiving instruments, and the working of the telephone on telegraphic wires; Class 7, processes and specimens of electro-metallurgy; Class 8, optical instruments for both science and industry; Class 9, photography, including its new applications, and other methods of utilizing light; Class 10 (the production of heat and gold) embraces the utilization of solar and terrestrial heat, machines for making artificial ice, and for the liquefaction of gases, as well as instruments for measuring degrees of heat and cold; Class 11 (warming, lighting, and ventilation) includes fireplaces, stoves, apparatus for the use of mineral oil for domestic and industrial purposes, artificial gas and electrical illumination; Class 12 relates to hydrostatics, hydraulics, and pneumatics; and Class 13, to the production and utilization of sound, acoustic telegraph, the telephone, aerophone, and phonograph.

GROUP III.—*Applied Chemistry*.—Class 14. The manufacture of artificial products. Class 15. Bleaching, dyeing, and printing stuffs. Class 16. Chemical apparatus and cases of testing materials. Class 17. Chemical processes in glass manufacture, and specimens of various glass work. Class 18. Processes of raw materials employed in porcelain manufacture, with specimens of the various products. Class 19. Perfumery. Class 20. Pharmaceutical and hygienic chemistry. Class 21. Wall paper and imitation leather. Class 22. Leather and hides, with their applications. Class 23. Appliances and products of the India-rubber and gutta-percha trade. Class 24. Preserved foods, and apparatus for their preparation.

GROUP IV.—*Applied Mechanics*.—Class 25. Mechanics applied to the liberal arts, printing and lithographic presses, voting and writing machines. Class 26. Mechanics applied to furniture and musical instruments. Class 27. Machines and tools used in Morocco leather manufacture, marquetry, and toy making. Class 28. Goldsmith's work and clock making. Class 29. Weaving. Class 30. Manufacture of shoes and hats. Class 31. Making nets and other appliances for fishing. Class 33 includes agricultural implements, machines, and appliances for the preparation of food. Class 34 is restricted to mining and metallurgical plant, including steam engines, models of underground workings, appliances for the driving of tunnels, foundations by means of compressed air, furnace bars with water circulation, metals, alloys, and specimens. Class 35 embraces the plant of chemical works, paper mills, and dye works, new motors, utilization of the force of the tides, removing incrustation from steam boilers, etc.; and Class 36, the manufacture of arms and projectiles.

GROUP V.—*Mechanics Applied to Locomotion*.—In Class 37 will be represented railway plant, permanent way, and their maintenance, steep gradient lines; improvements in railway carriages, their lighting and heating; steam tram cars, locomotives working with compressed air, and traction engines; new brakes; underground lines and tunnels; and in Class 38 vehicles of different kinds employed by various nations, and velocipedes. Class 39 is devoted to navigation, and Class 40 to aeronautics; Class 41 to traveling appliances, including portable apparatus for scientific expeditions; and Class 42 to articles and products employed in the packing of goods, and lifting machinery.

GROUP VI.—*Applications of Natural Science (Class 43) to Agriculture and Horticulture, and (Class 44) to Forestry*.—Class 45 relates to the various natural products employed in industry; Class 46 to the utilization of textile fibers, basket work, straw paper, and cardboard; Class 47 to artificial flowers, fruits, and shrubs; Class 48 to natural history, with appliances for the taxidermist; Class 49 to useful and injurious insects, with methods for the destruction of the phylloxera. In Class 50 will be found specimens of alimentary substances. Class 51 relates to pisciculture; Class 52 to fisheries; Class 53 to non-alimentary sea produce; Class 54 to,

medical science and instruments, and the acclimatization of cinchona and the eucalyptus in Africa and the South of France; Class 55 to surgical science and instruments; and Class 56 to dentistry. Class 57 covers the wide field of sanitary science, individual and general, comprising discoveries relating to hygiene and the well being of the working classes, baths, gymnasiums; public and private closets, the purification and utilization of water, sluices, and sewers; appliances connected with highways and systems of paving; fire engines and fire signals; waterworks and mains; matters relating to hospitals and models; and, finally, appliances for cremation.

GROUP VII.—*Mathematical Instruments* for (Class 58) measuring, dividing, and calculation; (Class 59) astronomy and navigation, including balances, weights, and measures; (Class 60) astronomy; (Class 61) meteorology, and (Class 62) horology, including astronomical clocks and chronometers, public clocks and their illumination, pedometers, etc.

GROUP VIII.—*Geology* (Class 63) applied to agriculture and (Class 64) industry; artificial stone and raw products for ceramic art, with specimens. Class 65 includes mineral fuels and exploring plant, works for obtaining a water supply, artesian wells. Class 66. Precious stones. Class 67. Geological and palæontological collections, plans, and sections.

GROUP IX.—In Class 68 will be found books, manuscripts, and designs relating to the classes of the Exhibition; while Class 69 will consist of replies to a series of questions, addressed to each exhibitor, either introduced or under consideration.

GROUP X.—*Special Exhibit of the Direction of the Exhibition of Sciences Applied to Chemistry*.—A. Reproduction of a glacier (about 10 meters high), with an internal grotto, wherein will be figured the different terrestrial formations, and the fossils met with in each of them. B. Reproduction on a large scale of a prehistoric habitation, a habitation of modern savages, and a model house of the present day, in which hygiene, comfort, and luxury have been attended to. C. A map in relief of Europe at the tertiary epoch. D. A grand dioramic view of the spot where Paris now stands, before the apparition of man on earth. E. Grand dioramic view of the same spot during the cave period.

GROUP XI. embraces a loan collection of artistic and industrial objects, and also temporary exhibitions of flowers, fruits, and vegetables.

The aim of the directors of this exhibition is to make it excel not in bulk, but in the careful selection and educational value of the objects and processes exhibited. The charge for exhibition space is low, and no charge will be made to workmen, scientific societies, museums, governments, and exhibitors generally, whose productions are of an exceptionally interesting character.

RECENT AMERICAN PATENTS.

An improved mill for removing the germ and the fuzz from the kernels of wheat, without reducing the wheat or making flour, has been patented by Messrs. Samuel Potts and Orvid Parson, of Somerset, Wis. It is said that the flour made from wheat prepared by this mill is of superior quality.

An improved combined pocket match safe and candle holder has been patented by Mr. Francis A. Farrell, of Brooklyn, N. Y. It is compact and convenient, and maybe readily carried in the pocket.

An improved discharge pipe plug for wash basins, patented by Mr. John S. Gilbert, of New York city, is so arranged that it cannot be removed from its wash basin, and will close automatically when released.

A new pad for securing an extra pad or housing to a harness saddle, which holds the pad securely, preventing it from sliding, drawing, and twisting, has been patented by Mr. Turner Buswell, of Solon, Me.

An improved cartridge, having a shell capable of taking a number of balls each, supplied with a separate charge of powder, and arranged so that the foremost charge will explode first and the others in succession, has been patented by Mr. John E. Tyler, of Roxobel, N. C.

Mr. Ira L. Sherman, of Cattaraugus, N. Y., has patented an improved iron fence, having an ornamental two-part rail which clamps the pickets on opposite sides, and is held together by sleeves which slip over the two parts.

Mr. George Lizars, of Paris, France, has devised an improved wet gas meter, provided with a compensating measuring drum, by which a uniform amount of gas is passed through the meter without regard to the level of the water.

An improved gag runner for harness has been patented by Mr. William M. Blain, of Salinas, Cal. It is adapted to receive a rosette loop for attachment to the bridle, and it forms a neat and simple attachment to the bridle for guiding the reins.

A novel and simple device for holding and displaying sample shoes on shoe boxes, has been patented by Mr. Benton Elliott, of Ellsworth, Wis. It consists of a spring clasp made from sheet metal, and it may be readily applied to the shoe and the box.

The Odor of Human Hair.

In *Le Progrès Médical* M. Galippe calls attention to the medico-legal value of the odor of the human hair. He asserts that from the simple smell of a lock of hair he can tell whether the lock has been cut from the living subject or whether it has been composed of hair that has fallen out. Hair dressers have acquired this art, which is said never to fail them. Hair which

has fallen out has a dull appearance, attributable to disease, and is not easily made up; it has no peculiar smell. The hair of the Chinese has a characteristic odor of musk, which is so persistent that it cannot be concealed by cosmetics, for it cannot be destroyed by washing with potash. The hair of the Chinese has also a reddish tinge, and is polyhedral in section. Hair of hysterical patients has a peculiar and distinguishing odor which is most perceptible at the approach of a crisis. Certain hair is electrical, the electricity being developed more readily after rubbing. M. Bert states that hair which is turned white from age begins to change color rather at the apex than at the base.

The Cultivation of Vanilla Beans.

It is probable that the plant which produces the vanilla bean will soon be grown to a larger extent than hitherto. At present the main supply of the bean comes from Mauritius, Brazil, and Mexico, but there is every reason to believe that the parasitical plant which produces the bean can be raised with profit in many other places having the necessary climatic conditions and trees which will afford it the requisite shade. The vanilla plant grows to the height of about a foot, thrives for 30 or 40 years, and produces about fifty pods each year after the second year. The beans require eight or nine months to mature. To prevent them from excessive shrinking they are oiled occasionally, and then are dried in the sun. When warm they are wrapped in woolen cloths to absorb the evaporation, and at this stage they acquire their fine silvery black color.

A Remedy for Whooping Cough.

Dr. Garth (*Wiener Allgem.*) states that by placing xx. gtt. ol. terebinth. on a handkerchief, holding it before the face, and taking about forty deep inspirations, to be repeated thrice daily, signal and marked relief, followed by rapid cure in cases of laryngeal catarrh, is the result. In an infant fifteen months old, in the convulsive stage of whooping cough, he directed the mother to hold a cloth, moistened as above, before it when awake, and to drop the oil upon its pillow when asleep. The result was markedly beneficial. In twenty-four hours the frequency and severity of the attacks were notably diminished, and by proper support by aid of stimulants, the improvement was rapid. Subsequently pertussis became epidemic in his vicinity, and he repeatedly used the drug in this way. He gave it to children of all ages, and in any stage of fever. The initial catarrh, the convulsive, and the final catarrhal stages were all decidedly benefited, the spasmodic attacks being in many cases aborted.

Heat Without Fuel.

Mr. M. A. Shepard, of Lebanon, Ill., has patented a method of utilizing the uniform temperature of the earth at a distance beneath the surface for the purpose of warming the air supplied to dwellings in winter and cooling it in summer. From a two column article in the *Lebanon Journal*, headed a "Wonderful Scientific Discovery," we take the following description of the leading features of his invention:

This new improvement is simply to sink a well or shaft into the earth till a living spring or stream of water is reached, which is invariably at the same temperature as the earth. At the bottom of this excavation is a series of coiled iron pipes (or they may be arranged similar to steam radiating pipes), placed down into the living water. At one end a connection is made to a large pipe extending to the surface of the earth, through which air is admitted to the series of pipes in the living water. At the other end a large pipe is connected, and arranged to communicate with the buildings to be supplied with air. All that now remains necessary to produce the uniform temperature of the water in the earth is to force or draw the air through these pipes and bring it into the buildings. This will require but a small amount of power.

The title of this new improvement and discovery is a new method of producing heat and ventilation. Patented March 11, 1879.

Strange Freak of Water Fowl.

For several mornings past the guards at the government bridge over the Mississippi River at this point, with other citizens whom they have informed of the occurrences, have been greatly interested in the actions of wild water fowl—ducks and geese, and even swans. About midnight these fowl commence gathering in the river, probably a mile above the bridge, and float down to the bridge, attracted, no doubt, by its lights. The moment they strike its shadow, as made by the lamps, they leave the water, fly up stream some distance, again float down to the bridge, and again rise and return, to repeat the trip. The bridge guards and tenders believe that these flocks often number 300 to 500 ducks and geese. Saturday morning four swans were seen with one flock. When they rise from the water they go up with a rush and whirr that can be heard three or four blocks distant. When the gray of dawn appears in the east the bridge men can see fowl leaving the water up stream as far as vision can reach—and off they fly for the north. The sloughs near to and the small streams which empty into the Mississippi were frozen during the recent cold snap, and the great river is the only open water the birds can find. But it is strange they do not alight in the water below the bridge as well as above it.—*Davenport (Iowa) Gazette*.