

is selected for the handles of light tools, for small screws, boxes, etc. It most resembles boxwood, and is most proper to supply its place. Bowls and trays are made of red birch, and when saplings of hickory or white oak are not to be found, hoops, particularly those of rice casks, are made of the young stocks and of branches not exceeding one inch in diameter. Its twigs are exclusively chosen for the brooms with which the streets and courtyards are swept. The twigs of the other species of birch, being less supple and more brittle, are not proper for this use. Shoe lasts are made from birch, but they are less esteemed than those of beech. Immense quantities of wooden shoes are made in France from the wood of the common European alder, which are seasoned by fire before they are sold. The wood of the locust is substituted for box by the turners in many species of light work, such as saltcellars, sugar bowls, candlesticks, spoons, and forks for salads, boxes, and many other trifling objects, which are carefully wrought into pleasant shapes and sold at low prices. The olive is used to form light ornamental articles, such as dressing cases, tobacco boxes, etc. The wood of the roots, which is more agreeably marbled, is preferred, and for inlaying it is invaluable. Of persimmon turners make large screws, and timmen mallets. Also shoemakers' lasts are made of it equal to beech, and for the shaft of chaises it has been found preferable to ash, and to every species of wood except lancewood. The common European elm is used for the carriages of cannon, and for the gunwale, the blocks, etc., of ships. It is everywhere preferred by wheelwrights, for the naves and felloes of wheels, and for other objects. White cedar serves many subsidiary purposes. From it are fabricated pails, wash-tubs, and churns of different forms. The ware is cheap, light, and neatly made, and instead of becoming dull, like that of other wood, it grows whiter and smoother by use. The hoops are made of young cedars stripped of the bark and split into two parts. The wood also supplies good charcoal. The red cedar furnishes staves, stopcocks, stakes, and is also used for coffins.

A few special applications of wood in this country are mentioned, separated into trades, namely:

Sieves, usually of black or water ash for the bottom and oak or hickory for the circle; whipstocks, white oak; baskets, willow, white oak, and shellbark hickory; picture frames, white pine and sweet gum; saddle-trees, red maple and sugar maple; screws of bookbinders' presses, hickory and dogwood; hatters' blocks, sour gum; corn shovels, butternut; shoe lasts, beech, and black or yellow birch.

To attempt any comprehensive review of the list of American applications would require another column or more.

Reports on the Paris Exhibition.

Governor McCormick, Commissioner General to the Paris Exhibition, requested the Assistant Commissioners to complete and forward to him their reports by the 1st of April. The following is a list of these reports:

Governor R. C. McCormick, Commissioner-General: "The Administrative Bureaus of the American Representation at the Paris Exhibition of 1878."

F. A. P. Barnard, of New York, President of Columbia College, Assistant Commissioner-General: "The Exhibition at Large and the General Results thereof."

Daniel J. Morrell, of Pennsylvania, President of the Cambria Iron Works and President of the American Iron and Steel Association: "Iron and Steel."

Donald G. Mitchell (Ike Marvel), of Connecticut: "Household Furniture and Accessories."

William W. Story, of Massachusetts: "Art."

Henry Howard, of Rhode Island: "Textile Fabrics."

William T. Porter, of Delaware, artisan expert: "Machinery."

Thomas B. Ferguson, of Maryland, Commissioner of Fish and Fisheries: "Fish and Fisheries."

William A. Anderson, of Virginia, of the Tredgar Iron Works: "Transportation."

George W. Campbell, of Ohio, grape grower: "Horticulture."

John J. Woodman, of Michigan, President of the Michigan Grangers' Association, and practical farmer: "Grains."

A. J. Sweeney, of West Virginia, Mayor of Wheeling, artisan expert: "The Latest Devices in Machinery."

Samuel Dyshart, of Illinois, stock raiser: "Live Stock."

Thomas F. Jenkins, of Kentucky, Professor of Chemistry: "Chemicals."

Floyd B. Baker, of Kansas, Editor of the *Topeka Commonwealth*: "Forestry."

James D. Hague, of California, mining engineer: "Mines and Mining."

Pierce M. B. Young, of Georgia, planter: "Cotton."

Aristides Gerard, of Louisiana, inventor: "Steam Engines."

Joshua Q. Chamberlain, of Maine, President of Bowdoin College, and ex-Governor of Maine: "Education."

Eliot C. Jewett, of Missouri, mining engineer: "Technical Schools."

The following named reports have been requested from Honorary Commissioners appointed by the President on the nomination of the Governors of States:

William P. Blake, of Connecticut, Editor of the Reports of the Representation of the United States at the Paris Exhibition of 1867, Commissioner of the United States at the Vienna Exposition in 1873, and Commissioner to the Centennial Exposition at Philadelphia: "Ceramics."

Edward H. Knight, of the District of Columbia, Editor

of the "Mechanical Dictionary:" "Agricultural Implements."

The reports are carefully collated and indexed by the Commissioner General and will be delivered to the Government by May 1. They will fill four volumes royal octavo, uniform with the reports on the Paris Exhibition of 1867 and Vienna of 1873.

It is to be hoped that the printing of these reports will not be long delayed. The industrial world moves rapidly, and such reports soon become practically antiquated.

The Commissioner-General has learned from the Director-General of the Exhibition that in spite of delays in the execution of the medals, he may expect the medals at an early date. As soon as received they will be forwarded to those to whom they were awarded.

The Commissioner-General expects to close up the affairs of his office by July 1. It appears that there will be a handsome sum to the credit of the Government out of the \$190,000 appropriated for a proper representation of the United States at Paris.

GRAY POTTERY.

The composition of that class of potter's ware designated as "gray" pottery was known thousands of years ago to the Chinese and Japanese. At the Louvre, in Paris, there is



GERMAN GRAY POTTERY.

to be seen a large vase of Japanese origin, several feet high, and of great beauty. In Europe gray pottery was first manufactured in Germany, in the provinces of Saxony, Bohemia, and Silesia, at the beginning of the Renaissance Period. Later, Boettcher manufactured gray pottery at Meissen, previous to discovering the art of making porcelain.

Our engraving represents a vessel, probably used to hold water or wine, of Silesian origin. It shows elaborate ornaments of different colors, in relief, on a sky-blue ground. It is now at the Louvre Museum, and illustrates well the artistic taste of that period.

NEW AGRICULTURAL INVENTIONS.

An improved seed planter, having a rotating hopper, which rolls on the ground, and in which there are a number of seed pockets, which deposit seed in a furrow formed by a plow or furrow opener, has been patented by Mr. William J. Ellis, of Oakland, Ga.

Mr. John Clayton, of the Grange Farm, Clayton (Brainerd P. O.), Minn., has invented an improvement in gang plows, the object of which is to regulate the width of the cut or furrow of the plow, so as to suit the power of the different teams that may be used, and to accommodate it to soil in which it is used. The plow is also provided with an adjustment for varying the depth of the furrow.

An improved rotary plow colter, which is provided with means for excluding dust and dirt from its bearing, has been patented by Mr. John Clayton, of Brainerd, Minn.

An improved cutter for plows, which is designed to shield the mould board, and lessen the wear of the plow, has been patented by Mr. Charles W. Twigg, of Fincastle, Ind. It

consists of a cutter applied at the junction of the land side and mould board and extending to the beam.

Mr. Patrick Groom, of St. Louis, Mo., has patented an improved handle socket for shovels, spades, and scoops, which consists in making the shovel strap separate from the shovel blade, and securing it by rivets in a countersink formed in the blade.

A novel churn, that agitates and aerates the cream by centrifugal force, has been patented by Messrs. E. B. Older and F. E. R. Megow, of Independence, Iowa. This invention consists in a concave rotary dasher and a corrugated gatherer rotated by the dasher shaft.

A hay rack and fence, which is constructed so that the fence may be supplied with additional bars or rails, to convert a portion of the panels into feeding racks for cattle, has been patented by Mr. Louis Prince, of Nashville, O.

The Fate of a Herd of Buffaloes.

An army officer who recently arrived in Chicago from the Yellowstone Valley, tells a story of what happened to a herd of buffaloes as they were migrating southward. The herd numbered 2,500 head, and had been driven out of the Milk River country by the Indian hunters belonging to Sitting Bull's band. When they reached the river they ventured upon the ice with their customary confidence, coming upon it with a solid front, and beginning the crossing with closed ranks. The stream at this point was very deep. When the front file, which was stretched out a quarter of a mile in length, had nearly gained the opposite shore, the ice suddenly gave way under them. Some trappers who were eyewitnesses of the scene said it seemed as if a trench had been opened in the ice the whole length of the column. Some four or five hundred animals tumbled into the opening all in a heap. Others fell in on top of them and sank out of sight in a twinkling. By this time the rotten ice was breaking under the still advancing herd. The trappers say that in less than a minute the whole body of buffaloes had been precipitated into the river. They were wedged in so thickly that they could do nothing but struggle for a second and then disappear beneath the cakes of ice of the swift current. Not a beast in all that mighty herd tried to escape, but in a solid phalanx they marched to their fatal bath in the "Big Muddy." In a minute from the time the first ice broke not a buffalo's head or tail was to be seen.

Possibly occurrences of this sort, in ancient tertiary times, helped to form the remarkable deposits of bones found in the old lake beds of the great West and elsewhere. In these deposits the earth is literally crowded with the bones, sometimes chiefly of one type, sometimes comprising many distinct species. In the latter case the victims were probably swept away by sudden floods, their remains mingling confusedly in quiet basins.

The Textile Industries of Finland.

It is reported by the German press that a large amount of spinning and weaving machinery is being transferred to Russia from German mills, closed on account of declining trade. The Grand Duchy of Finland is becoming one of the principal seats of Russian textile manufactures.

There are five large cotton mills at Tammerfors, Abo, Nikolaistad, Forssa, and Kirokoski. The imports of raw cotton have nearly trebled since 1866. The spinning mill of Forssa has 18,000 spindles and 500 looms, and employs 1,500 hands. The mill at Abo manufactures thread only, and Kirokoski only textiles. Mostly all the domestic weaving of linens has been superseded by the great linen mill of Tammerfors, the only one in the country. It has five turbines, and employs about 900 hands. There are six manufactories of cloth, one of knit goods, and five mills for the manufacture of woolen yarns and textiles. The largest woolen cloth factory is near Abo, and turns out about 65,000 or 70,000 yards of cloth. The proximity of the Southern provinces to cotton supplies from Egypt will, of course, give them an advantage over such distant provinces as Finland.

Curiosities of Bismarck's Brains

In Dr. Busch's "Book on Bismarck," the Prince describes a horse accident he once had when riding home with his brother. He fell violently on his head. "I lost consciousness," he says, "and when I recovered it I had only half. That is, one part of my intellect was clear and good, the other half had gone." Finding (on examination) his saddle broken, he called for his groom's horse and rode home. When the dogs there barked, by way of salutation, he thought them strange dogs, and scolded them angrily as such. Then he said the groom had fallen with the horse, and they should go and fetch him, and he became angry when they would not do that (because of a sign from his brother). He seemed to be himself and at the same time the groom. After eating and sleeping he was all right next morning. He points out that he had done all that was necessary in a practical respect; herein the fall had caused no confusion of ideas. "In short, it was a remarkable illustration of the fact that the brain lodges different mental powers; but one of these had been stupefied for some longer period of time by the overthrow."

THE AFRICAN CABLE.—The steamer Kangaroo, with part of the cable to be laid between Natal and Aden, left the Thames April 7 for Natal via the Suez Canal. The Natal and Zanzibar section will be open for business in July. This will place South Africa within a week's communication of London. The remainder of the line will be completed before the end of the present year.