

The billows rolled and plunged upon the sand,
 The circling sea-gulls swept beyond his ken,
 And from the parting cloud-rack now and then
 Flashed the red sunset over sea and land.
 Then by the billows at his feet was tossed
 A broken oar; and carved thereon he read,
 " Oft was I weary, when I toiled at thee; "
 And like a man who findeth what was lost,
 He wrote the words, then lifted up his head,
 And flung his useless pen into the sea.

Henry W. Longfellow.

CRUDE AND CURIOUS INVENTIONS AT THE CENTENNIAL EXHIBITION.

XI.

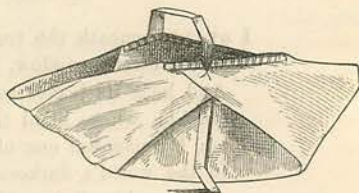
VI. WATER VESSELS, WOODEN WARE, AND POTTERY.

AMONG the earliest needs of man must have been baskets and water-vessels. Baskets we have already considered; but man could not always be within an arm's length of a brook, and he must needs have a cup or the equivalent of a bucket.

The Andamaner, with his coat of mud, is by common consent at the foot of the scale of humanity, and no one thought sufficiently of him to exhibit the shell, calabash, or cocoa-nut which serves for his drinking-cup, or the bamboo which forms his water-vessel. The *coco-demer* of the Seychelles, the plantain-leaf of the Australian, the bark bucket of the Iroquois Indian, the conch of the Mexican Gulf Indian, and the calabash of the Mohave were exhibited in their places, together with a multitude of other curious vessels involving more constructive ability.

In the South Australian-exhibit in the Main Building was a bucket made of a folded plantain leaf. The word "south" in that part of the world has a cooler signification than with us, but the colo-

ny of South Australia runs clear across the island to the Bay of Carpentaria, a range of twenty-six degrees of latitude, and extends twelve degrees within the tropics. The plantain leaf is cheap and water-tight, and, though perishable, is



(Fig. 264.) Plantain-Leaf Bucket. South Australian Exhibit.

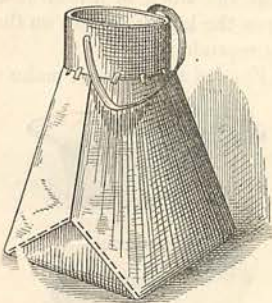
easily replaced; the work expended on it is not enough to make it valuable. It is folded up of a single leaf, corner folds being made without cutting gores. It will hold two and a half gallons of water.

The water-vessel of Timor, which is one of the nearest islands northeast of Australia, is made from an entire unopened leaf of the palm. The bamboo is, however, the usual water-jar of Malaysia. This was shown in the Netherlands colonies exhibit from the island of Java. The oil-vessels of tropical Australia are bamboos and turtle bladders. Among some of the Australian tribes the skull of a deceased person is used by the

nearest relative as a drinking-vessel. It is slung from the owner's neck by a cord of bulrush fibre, and carried everywhere. It is filled with water through the foramen, and is plugged with a wisp of grass.

The water-vessels of the Fijians are of bamboo and baked earthen vessels glazed with *kauri* gum.

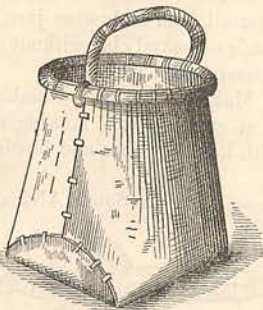
Figures 265 and 266 are two sap buckets of birch bark, differing somewhat in construction, but each made of a single sheet of birch bark folded up at the corners. One has a hoop on top, forming a



(Fig. 265.) Birch Bark Sap Bucket. Iroquois Indians. National Museum Exhibit.

neck. Both have bark bail. They are used as sap-pails on the northern frontier of the United States and in Canada, where birch and maple abound. The examples shown are of Iroquois Indian manufacture.

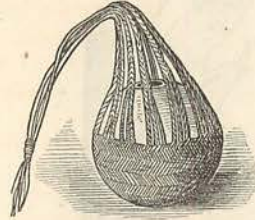
The Sandwich Islanders exhibited a number of the utensils of common life,



(Fig. 266.) Bark Sap Bucket. St. Regis Iroquois. National Museum Exhibit.

and among them the water-vessels, Figures 267, 268. The former is a three-pint calabash bottle, the gourd being in

a sling of finely-plaited grass or split bark fibre. Figure 268 represents a much larger one from the same island.

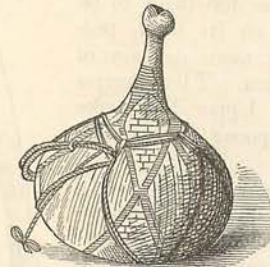


(Fig. 267.) Calabash Bottle. Hawaiian Exhibit.

It is called a printed water-gourd, *Hue-wai pawehe*, and holds two and a half gallons; the sling is of coir.

The objects which properly fall within the range of the present article might be arranged in either of three orders: relative crudity, purpose, or geographical occurrence. The latter is as good as any, perhaps, and will be generally observed. We pass from the islands of the Pacific to the African continent, which has proved so fertile in objects adapted to our present subject of study.

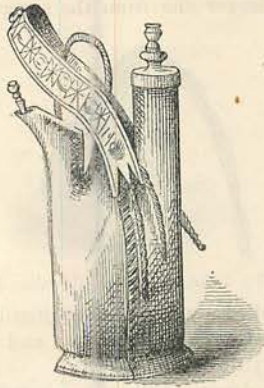
The collection brought from Central



(Fig. 268.) Water-Gourd. Hawaiian Exhibit.

Africa by Long Bey, of the Egyptian service, and exhibited in the Main Building, contained the black bottle, Figure 269, made of heavy leather sewed at the seams and having spouts for filling and drinking, each with an ivory stopper. It is slung by a brown leathern band, which has a black binding ornamented with green stripes. This plan of having two openings, like a tea-pot, is found in other places: for instance, two vessels from Mesopotamia, shown in the Turkish exhibit and to be noticed presently. The Niam-niams of the head-waters of the

Nile are very ingenious in carving wooden furniture and dishes from several of



(Fig. 269.) African Leather Bottle. Egyptian Exhibit.

the *Rubiaceæ*. King Munza's largest meat dish, five feet long and hewn from a single block, was kindly lent to Mr. Schweinfurth by the king to wash the traveler's clothes in. The king wore extravagant shirts of fig-bark, which would not bear the wash-tub. The Monbuttoos are said to be the only Africans who use a single edge graving tool which allows the forefinger to be rested on its back, permitting more delicacy of execution. The Bongos of the Upper Nile make horn spoons of good design.

Passing to the Gold Coast collection in the English colonies exhibit, we find a number of domestic utensils, usually made of a white wood and cut out of the solid block. Figure 270 is a palm-oil ladle, of white wood, and has a



(Fig. 270.) Palm-Oil Ladle. Gold Coast Exhibit.

capacity of one quart. Its total length is twenty-two inches, and the bowl has a diameter of seven inches. The noggin used by the maple-sugar makers of the West is a similar instrument, but holds three times as much. The bowl of the noggin is

made out of a knot of maple or walnut, and, being well shaped and smooth, furnishes as handsome a ladle as one might wish to see. The Gold Coast exhibit, which now belongs to the British Museum, contained several wooden bowls from a foot to eighteen inches in diameter, hollowed by knives and scoopers out of solid wood. One of them had ornaments made with a hot iron; the others were mostly stained black. Another wooden spoon (Figure 272) shown in the same collection evinces the imitative tendency of the people, the handle being carved to represent the stock of a flint-lock musket; even the letters carved on the original are reproduced.

The Fans of the Gaboon make water-

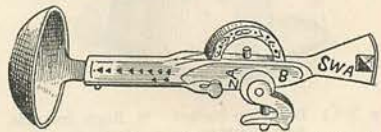


(Fig. 271.) Wooden Bowls of Africa. Gold Coast Exhibit.

vessels of large reeds, coated within and without with a vegetable gum laid on while hot. This imparts a disagreeable flavor to the water until the vessel has been used for some time; perhaps they care but little for that, and may come to like it, as the Romans did the resinous taste derived from their wine jars, which were made of baked clay without glazing and water-proofed with pitch.

The Makololo of the Zambesi are adepts at carved work, making wooden pots with lids, and jars and bowls of all sizes.

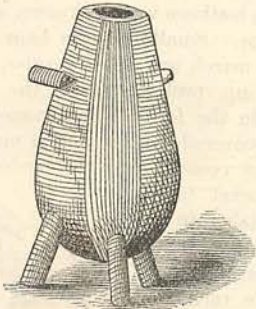
We come now to South Africa. The



(Fig. 272.) African Wooden Spoon. Gold Coast Exhibit.

Kafirs are the most energetic, ingenious, and cruel of the tribes of that region.

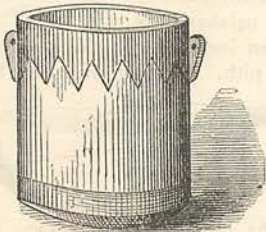
They possess vessels of wood, earthenware, and woven grass. The Kafir makes excellent milk and beer pots, apparently choosing basket-work for the former and wood for the latter. The milk-pail is dug out of a solid block of willow-wood, chopped to shape on the outside and excavated by an *assegai* on the inside, which is fourteen inches deep and four inches across the mouth. The outside is usually ornamented with a hot iron. In making, it is buried in the earth, so that the man can have the use of both hands in scooping out the interior. It has two projecting ears, to en-



(Fig. 273.) Kafir Milk Jar. Cape of Good Hope Exhibit.

able the man who is milking to hold it with his knees. The vessel in which the Kafir makes and keeps his beer is a basket, and should he make it of wood he still imitates the basket pattern. The millet is ground and steeped, and the wort fermented.

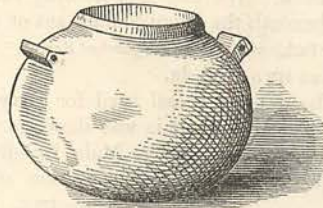
It would not probably be considered palatable by us, but, as it has the desired intoxicating effect, it is probably



(Fig. 274.) Wooden Milk Jar. Cape of Good Hope Exhibit.

as good for them as any other. The Kafirs sometimes use the paunch of an

animal for a water-vessel, and sometimes even the intestines. The ever-ready *assegai*, which is the javelin and



(Fig. 275.) Kafir Milk Pot. Cape of Good Hope Exhibit.

the knife of the Kafirs, is used also in making wooden spoons, upon which they lavish great pains, and which are used in eating the mush that constitutes their principal food.

None of the other tribes of South Africa show the ingenuity of the Kafirs. The Banyeti and Hottentots, however, carve wooden vessels: the former make large wooden jars with very neat lids; the Hottentot jars and bowls are of willow wood, roughed out with the native axe and hollowed with bent knives. They are rubbed with fat to prevent splitting; they hold from one quart to five gallons. The Hottentot substitute for a spoon is a brush made from the stem of a fibrous plant (*umphobo*), which is cut to a suitable length and one end



(Fig. 276.) Kafir Wooden Spoon. Cape of Good Hope Exhibit.

frayed out by pounding. The milk bag of the Bechuana is made from a piece of the skin of an ox, quagga, or zebra; it is almost two feet in length and one in width. It is of one piece, turned over and sewed along the meeting edges. Openings at the top and bottom are closed by conical plugs. Through the upper and larger opening fresh milk is poured into the bag and coagulated milk removed; through the lower one whey is drawn off. Milk is always soured before use. The Bosjesman uses the paunch of an animal for a water bag, or the emptied shell of an ostrich egg. The Balakahari, who have neither pot-

tery nor metal, use ostrich eggs and skins to carry water from the pools in the desert. The shells are carried in a net on the back. We can find nothing ranking beneath the gaunt inhabitant of the

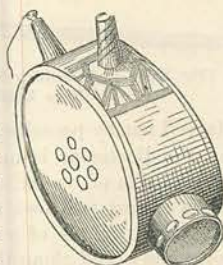
"Pathless depths of the parched Karroo," and so turn to Asia.

The wooden vessel used for carrying water in Mesopotamia was shown in the Turkish exhibit in the Main Building. Figure 277 consists of a section of a



(Fig. 277.) Wooden Water Bottle of Bagdad. Turkish Exhibit.

pine-tree, the inside hollowed out from below, and closed by a circular piece of wood exactly fitted into it. It is fifteen inches high and has two hoops. Figure 278 is a small, cask-shaped vessel, used for a similar purpose in Anatolia. The true cask, made of staves and hoops, seems not to be in common use in Asia, outside of China and Japan. Still, it is not a modern contrivance. The Roman cask (*cupa*, Greek *κύπελλον*), consisting of wooden staves (*tabulæ*) and bound with hoops (*circuli*), was used for wine, vinegar, and oil, for storage and transportation. Its diminutives (*cupula*, *cupella*) correspond to our

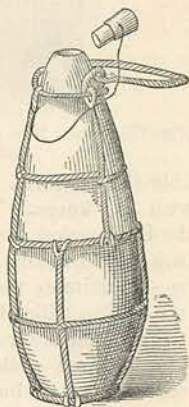


(Fig. 278.) Anatolian Water Cask. Turkish Exhibit

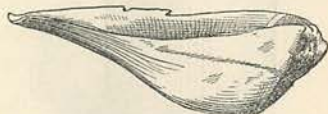
firkin, keg, etc. The Koonawarese, on the upper Sutlej, have no clay fit for pots, and use wooden vessels hollowed out of blocks and strengthened with iron hoops, somewhat like the *cogs* of the Scotch Highlanders. In Sikkim, troughs for baths are obtained by hollowing a section of tree trunk; the water is heated by throwing in hot stones

with bamboo tongs. More massive and lasting is the stone trough made by order of Dootoogaimoonoo of Ceylon, in the second century B. C., still existing in the ruins of the palace of Anurádhapoorá. It is sixty-three feet in length, three and one half in width, and two feet ten inches in depth. It was prepared to hold drink for the priests! The Singhalese water-pot, has a spout for pouring water in a stream into the mouth without touching the lips. India has vessels of all kinds: iron, bronze, brass, earthenware, calabash, cocoa-nut, and skins. The water for the Columbo garrison was, until lately, brought on the backs of bullocks in leathern vessels, known as *puckally bags*. Small leathern bags carried on the march are called *beasties*, a term picked up, probably, from the Scotch troops in the fort. The Japanese have basket-covered bottles and a multitude of other vessels, from the crudest bamboo bucket to the most elaborate productions of bronze and porcelain.

If we turn from Asia to America, we shall perceive the same variety of things, but without sameness. In the British colonies collection there was a gourd bottle from Trinidad (Figure 279) in slings of rattan. It is a common form in the West India islands. The calabash is eighteen inches high; the stopper is of agave pith. Coming over the hot sea



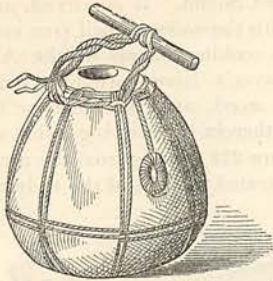
(Fig. 279.) Gourd Bottle. Trinidad. English Colonies Exhibit.



(Fig. 280.) Conch Shell Drinking-Cup. Alabama. National Museum Exhibit.

of the Caribs and the Mexican Gulf, we find a conch drinking-cup of the Alabama Indians. The interior portion of

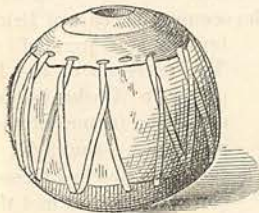
the shell has been cut out, leaving the larger portion of the longest whorl and



(Fig. 281.) Gourd Bottle of Mohaves. National Museum Exhibit.

the lip. It had a ceremonial use among the southern Indians, in the administration of the "black drink" referred to in the writings of explorers of a century since. Such were placed upon and in the mounds of the chiefs and Micos to whom they had belonged.

Earthenware vessels will be considered presently, as they were shown in sufficient number and variety to merit a separate grouping. Passing over the pottery of the Mexican and Pueblo Indians shown in the National Museum, Government Building, we notice two calabashes of the Mohave Indians of Arizona. Figure 281 is a calabash bottle made of a hard-shelled gourd inclosed in bark cords. It has a handle of wood. Figure 282 is a round calabash inclosed



(Fig. 282.) Mohave Calabash. National Museum Exhibit.

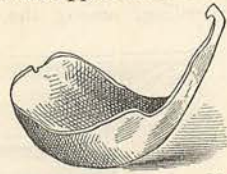
in raw-hide straps. These vessels are used for carrying water and holding seeds.

Figure 283 is a rude ladle or dipper of buffalo horn from the Pi-Utes of Southern Utah. Such utensils are made by softening the horn in embers or hot ashes, spreading the base, and drawing the tip out into a long handle. Some-

what allied in material, but of a rather unusual kind, is the small spoon (Figure 284) made of the upper mandible of the lesser puffin.

They are made by the Ya-kututs and Nush-e-gay Indians.

Figure 285 is a mush paddle obtained among the Hoopah Indians, Hoopah Valley, Klamath River, California.



(Fig. 283.) Buffalo Horn Dipper. Pi-Utes. National Museum Exhibit.



(Fig. 284.) Spoon of Puffin's Bill. National Museum Exhibit.

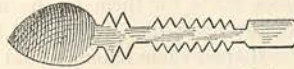
Bone is a favorite material for the purpose, and the remains of bone utensils are found in ancient graves and barrows. Several small bone spoons were disinterred by Dr.



(Fig. 285.) Mush Stick of Hoopah Indians. National Museum Exhibit.

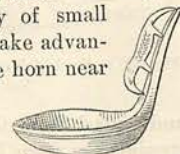
Schliemann in the excavations at Hissarlik in Asia Minor.

Figure 287 is a more ambitious affair,



(Fig. 286.) Hoopah Bone Spoon. National Museum Exhibit.

a ladle made from a horn of the mountain sheep (big-horn, *Ovis montana*): the handle ornament is like the fetich of the African, not alone in disposition but in form. In making these utensils, as also a great variety of small vessels, the Indians take advantage of a curve in the horn near the head. The horn is rendered workable by immersion in water boiled by means of heated stones. The nearly vertical position of the handle is found in some others of the illustrations, and resembles the Roman *simpulum*, a ladle to dip wine out of a deep jar (*crater*).



(Fig. 287.) Horn Ladle of Chinook Indians. National Museum Exhibit.

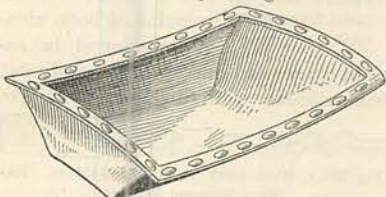
Passing westward to the Pacific and

following the coast to Alaska, we find a number of vessels and utensils of markedly different character from any of the preceding, among the Makah Indians



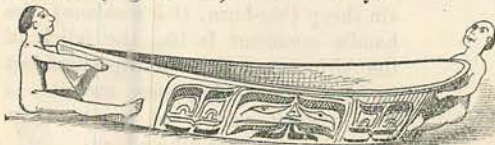
(Fig. 288.) Makah Food Tray. National Museum Exhibit.

of Washington Territory and Puget's Sound; and the Haidahs of British Columbia and Alaska. Figure 288 is a Makah food tray hollowed out of a solid block of yew, and has at the end the peculiar device common to the group of tribes in that vicinity. Figure 289 is a



(Fig. 289.) Wooden Tray of Makahs. National Museum Exhibit.

wooden tray, having the characteristic ornamentation by *oliva* shells sunken into holes made for them in the upper edge of the tray; they are tapped in by a pestle-shaped stone hammer, and each shows the mark of the blow, being nearly all broken. The food dish of the Makahs (Figure 290) is also of yew



(Fig. 290.) Food Dish of Makah Indians. Washington Territory. National Museum Exhibit.

and carved from the solid wood. The specimen is from Nesah Bay, Washington Territory. The characteristic orna-



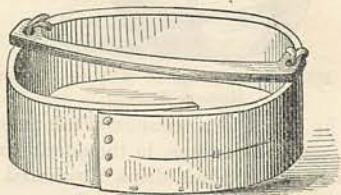
(Fig. 291.) Makah Horn Spoon. National Museum Exhibit.

mentation is very marked and elaborate, and the carving superior to anything

else we have offered in this section. Figure 291 is a horn spoon of the Makahs of Puget Sound. It is carved, and inlaid with the *haliotus* shell (sea ear).

The cooking vessels of the Ahits of Vancouver's Island are also hollowed out of wood, and the meat or fish is boiled therein by throwing in hot stones

Figure 292 departs from the previously illustrated utensils of the vicinity. It



(Fig. 292.) Wooden Vessel of Northwest Coast. National Museum Exhibit.

is a *kantag*, or large wooden vessel made of one broad, bent slab of spruce, with a massive bottom inserted and secured by pegs. These vessels are used for the great ceremony of purification, which takes place once in six months among many of the northwest tribes.

Proceeding northward along the Pa-



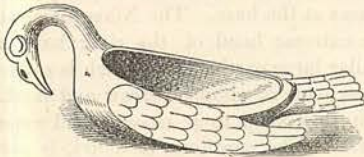
(Fig. 293.) Haidah Dinner Bowl. National Museum Exhibit.

cific we reach the widely-spread Haidahs who occupy the coast of British Columbia and part of Alaska.

The presence of the Russian power in Alaska is manifested in one feature of the ornamentation—the eagle. A rattle illustrated in a former number of this series had the two-headed eagle, in which the origin of ornament was more definitely indicated than in the monocephalous dinner bowls of Alaska. Figure 293 is a wooden dish, scooped from a solid block. It is from British Columbia. Figure 294 is a Haidah tray of white wood from the southern portion of Alaska. It is carved to represent a swan, and has wings fancifully painted blue. Figure 295 is a boat-shaped train-oil dish

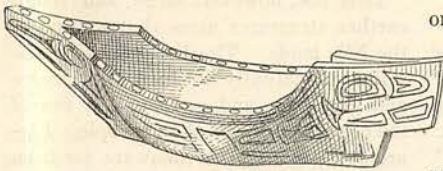
of yew; the characteristic ornament of haliotus shells is seen on the edge of the tray.

The horn spoon (Figure 296) of the Haidahs is lashed to a wooden handle.



(Fig. 294.) Haidah White Wood Tray. National Museum Exhibit.

With the end pointed it might be like the Roman *cochlear*, a spoon with a bowl



(Fig. 295.) Haidah Oil Dish. National Museum Exhibit.

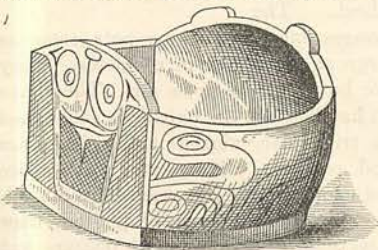
at one end and a point at the other, for eating eggs and shell-fish.

Figure 297 is a wooden tray made by the Haidahs of Sitka. It involves an



(Fig. 296.) Haidah Horn Spoon. National Museum Exhibit.

entirely different mode of construction from any others here shown. The sides are made of one piece, cut away thin at

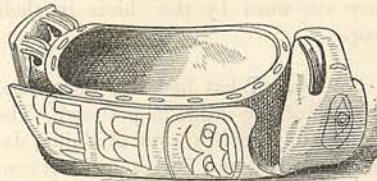


(Fig. 297.) Haidah Wooden Tray. National Museum Exhibit.

the corners, steamed and bent around so as to form the four sides, which are then pegged to the bottom piece.

The Kake Indians (a tribe of Haidahs), of Koro Island, Alaska, furnish us with two further illustrations, after which we may quit the Pacific coast. Figure

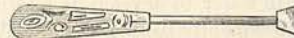
298 is a carved yew-wood oil vessel made in imitation of a rapacious bird, and with



(Fig. 298.) Yew-Wood Oil Dish of Koro Island. National Museum Exhibit.

its edge inlaid with haliotus shells. Figure 299 is a mush stick or berry scoop elaborately ornamented. An appropriate companion to the sap buckets (Figures 265, 266) is the wooden dipper or noggin of the Iroquois (Figure 300) in the same collection. It is formed from a maple or oak knot. The utensil is mentioned by Carver and other early travelers as being hollowed out by fire and finished with sharp stones, probably flakes. Steel tools are now used. The hook on the handle serves to suspend it.

One illustration, this time from New Zealand, and we have done with wooden



(Fig. 299.) Kake Mush Stick. National Museum Exhibit.

utensils. Figure 301, in fact, is not a utensil, but a carved wooden box, and so the association with the foregoing is reasonable. It shows the style of ornamentation of the Maoris, which may also be seen on their canoes, paddles, clubs, and spears, all of which are elaborately carved. The carving of the boxes is done by the chiefs themselves; their use is to hold the tail



(Fig. 300.) Iroquois Dipper. National Museum Exhibit.



(Fig. 301.) Carved Wooden Box. New Zealand Exhibit.

feathers of the bird called by the natives *E Elia* (*Neomorphia Gouldii*). It is al-

lied to the hoopoes; the tail feathers are dark glossy green tipped with white; they are worn by the chiefs in their hair.

Pottery. What had the Centennial to show of the crude in pottery? The proximately perfect work of China, Japan, Dresden, and Sevres does not concern us now. We are studying the savages of the present day, in order to understand what were the methods of our forefathers in very early times; to judge how the art grew among our uncultivated progenitors, by watching how rude man acquits himself now.

Africa is our first field. Its northeastern corner gave arts and manufactures to Greece when as yet the name of the continent was Libya, and the country of Egypt was considered a part of Asia. "Libya begins where Egypt ends." (Herod. iv., xli.) Times have changed, and the word "African" has come to be synonymous with barbaric. We find much there to suit our present purpose.

Earthen vessels are made by working clay with water to develop its plasticity, and subsequently baking them. When well made they consist of something besides clay; but as no clay in its natural state is free from sand, and some clays are already well mixed with what is needful for ordinary ware, so the earthenware of some tribes is relatively good while that of others is fragile. Again, to make good ware the green vessels are baked and then burnt; few savage tribes understand this, and they generally content themselves with a hot fire of brushwood and have no idea of a kiln. Consequently, the best of their make is comparatively poor. There are three kinds: sun-dried, baked, burnt. The Africans understand the two former. The Egyptians used adobes in the Pyramid of Hawara, and sun-dried clay jars for liquids and ovens. Their granaries were also of clay, built up of the plastic material or of bricks. In the Upper Nile country the same practice prevails now.

The Golo (Upper Nile) corn granary is, perhaps, the most graceful of its class. The actual receptacle for the grain is

made of clay, and in the form of a goblet; it is covered with a conical roof of straw, which forms a movable lid. To preserve it from rats it is mounted on a stem pedestal, which is secured by buttresses at the base. The Niam-niams at the extreme head of the river have a similar large earthen pot, which is sometimes made of chopped straw and mud. In it they keep their *eleusine* and some maize. The sorghum, or doura, is not known among them, although common lower down the river. The Nubian granary is a shallow pit sunken in the ground and plastered.

It is not, however, large and rough earthen structures alone that we find in the Nile lands. The Egyptian commissioners apparently selected the bizarre and glittering, and gave us but few of the common utensils of the people. Figure 302 is a large earthenware jar from Upper Egypt.

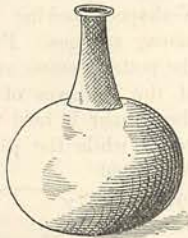
It is rough as to its material and manufacture, but possesses merit in form. The Dycoors of the Upper Nile make large earthen vessels as accurately as if turned upon a wheel. The



(Fig. 302.) Earthen Jar. Egyptian Exhibit.

Bongos excel in making pots, some as large as three feet in diameter. They are burnt in the open air. They have no handles, but the outside is roughened by triangular, zigzag, and spiral lines and patterns. The water bottles are flat ovoids and are carried on the head, a circlet of leaves or of plaited straw intervening. Their gourd platters and bottles have dark triangular markings. Clay bowls for pipes are made of fanciful patterns, men's heads for instance. Figure 303 is a black clay bottle from Soudan. It holds one and a half gallons and the neck is ornamented by cross lines made on the plastic clay. Good pottery is made above Soudan among the Niam-niams, and in the land

of the cannibal race, the Monbuttoos, on the Welle River south of the Nile watershed. The Niam-niam earthen vessels are very symmetrical, from the water-flasks of enormous size down to the pretty little drinking-cups. Like the other tribes of the Nile, they fail to wash out the mica and add sand to the clay; the heat being insufficient to vitrify the sand, the ware is frangible. The women are the potters, the men the smiths and musicians. The cannibal Monbuttoos are good potters.



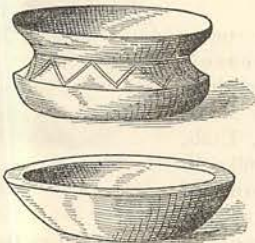
(Fig. 303.) Clay Bottle of Soudan. Egyptian Exhibit.

The Gold Coast of Africa was represented among other English colonies in



Fig. 304.) African Palm-Oil Pot. Gold Coast Exhibit.

the Main Building, and showed a number of native earthen pots and bowls of which Figures 304 and 305 are illustrations. The former is used for boiling palm-nuts



(Fig. 305.) African Gold-Washing Bowl. Gold Coast Exhibit.

for oil. It is eighteen inches in diameter and has a partial glazing, probably from a sprinkling of salt in the fire. It is very rough and crude. Figure 305

shows two earthen bowls for gold washing. The upper one is black, the color being merely on the surface. The shape is peculiar, and the outside is ornamented with circular lines and other markings made in the plastic clay. The flaring rim serves as a handle. Many different sizes and shapes were shown. The Fans of the Gaboon make excellent cooking-pots of earthenware without a wheel; these are round and shallow like milk-pans. The Fans also make clay pipe bowls, and earthen water-bottles and vessels for palm wine shaped like the classic *amphore*. The vessels are molded by hand, dried in the sun, and burned in a fire.

The Africans of Lake Shriba, in the Zambesi country, make cooking, water, and grain pots ornamented with the graphite found in the hills.

The Kafir pottery is made by the women exclusively, and on a plan derived from their basket-making. Rolls made of the clay of ant-hills broken up and kneaded are laid upon each other in a spiral form, and the layers pinched together with the finger and thumb as the work proceeds. The black earthen vessels used by the Basutos for beer-pots are made in the same way, and baked by a fire of dry cow-dung in the open air. The Damaras use cooking-pots of clay. The Banyeti excel in pottery and iron smithing.

The Kafir granary is a pit dug in the cattle inclosure and plastered with puddled clay. The opening is just large enough to admit a man, is a little below the surface, is hermetically sealed, and hidden by a covering of earth. The wheat granary of the Barolongs is an enormous earthenware jar placed in the least exposed part of the hut. The Ovambo granary is a jar on supports with a conical thatched roof; the jars are made of palm leaves and clay.

Pottery is made extensively in Madagascar. Jars are used for holding and carrying water in every household. They are polished with a substance resembling graphite. The rice granary of the island is a beehive-shaped clay tower sixteen feet high, with an aperture at

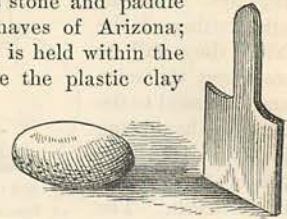
the top closed by a stone. It is ascended with a ladder.

The art of making pottery is native in but few of the Polynesian Islands. Fiji is the most notable exception. The possession of earthenware carried with it the knowledge of boiling, which was quite a new thing to the natives of most of these islands. The principal use of pottery in Fiji is for cooking; the pots are made to hold from five to forty gallons. They are of two colors, red and brown, from red and blue clays tempered with sand. Their apparatus is a cushion, a flat stone, wooden scrapers, a round stone to hold against the sides of the vessel, and a sharp stick. They do not use a wheel, but lay up the clay by hand in rings like the Utah Indians and the Kafirs. The vessels are symmetrical, elaborately ornamented, and are made in divers curious forms: several vessels united and the interiors connected, others discharging through hollow handles, and hollow spheres with rising, hollow, arching handles united at top; some resemble the Peruvian, shown hereafter. Some are as large as a hogshead, furnished with a number of openings for filling and discharging; they are also made with covers and with holes in the lids. After drying in the sun they are ranked on the ground and a fire of dry leaves and other light stuff is made over them to bake them. This is not very perfectly done, and the ware is coarse and somewhat fragile. The glazing is done as among the ancient Romans, by rubbing the pots while still warm and bibulous with resin; gum kauri is used in Fiji.

The Pelew islanders make pots of earthenware of an oval shape for cooking, but they are of poor quality.

Coming to North America we find the National Museum exhibit in the Government Building rich in Indian pottery

from the Southwest. Figure 306 is a conical dark earthen vessel, which is interesting as showing the probable form of the most primitive earthen vessels, taking for their mold or their model the V-shaped cooking baskets so common among savages. Figure 307 represents the potter's stone and paddle of the Mohaves of Arizona; the former is held within the vessel while the plastic clay is patted by the latter. The Mohaves store their grain and beans in



(Fig. 307.) Potter's Stone and Paddle. Mohaves.

large earthen jars and osier baskets. Figure 308 is an earthen spoon or ladle rudely formed in imitation of a bird, and ornamented inside with red paint. The Pimo pottery is all red or brown, the latter a blending of



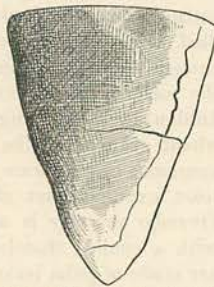
(Fig. 308.) Mohave Earthen Spoon. National Museum Exhibit.

black and red; the forms and sizes are various: jars, bottles, basins, saucers, cups, ranging in capacity from six gallons to half a pint. They are ornamented and painted with black lines arranged in geometrical figures.

The terracotta vessels exhumed from mounds at St. George, Utah, are peculiar in the mode of making and the evidences of the process left on the ware. The clay is made into a sort of rope, and is coiled up roll on roll, each being secured to the one below it by pinching with the finger and thumb, or similar means. Each of the three shown in Figures 309, 310, 311, has some peculiarity



(Fig. 309.) Earthen Vessel. Utah. National Museum Exhibit.



(Fig. 306.) Kuch Vessel. National Museum Exhibit.

of appearance; in some the pinch marks are rubbed out, in others disguised. Kafirs and Fijians, as has been mentioned, use the same process of building up rolls of clay into shape. Figure 312 is a rude, three-cornered, small-necked, dark clay vessel for carrying water. It may be called a canteen. It is from a mound near St. George, Utah. Figure 313 is a



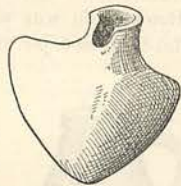
(Fig. 310.) Terra-Cotta Vessel. Utah. National Museum Exhibit.



(Fig. 311.) Terra-Cotta Jar. Utah. National Museum Exhibit.

deep bulging vessel, rudely ornamented with finger marks and ridges in patterns near the rim, and glazed with a vegetable gum. The southwestern Indians generally glaze their earthenware with *mescal* gum, which is laid on while the vessel is still hot from burning. This varnish is quite durable and serves to make the ware impervious to water.

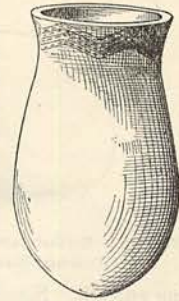
Figure 314 is a rude cooking vessel of clay from the Mandan Indians of Fort Berthold. It resembles in its material, form, and ornamentation those formerly in use among the more Eastern tribes. At the beginning of the present century they were observed by Carver among the Nadowessioux or Sioux.



(Fig. 312.) Three-cornered Earthen Canteen. Utah. National Museum Exhibit.

The terra-cotta seed-pot (Figure 315) of the Yaquima Indians, Mexico, is made apparently in imitation of an animal's distended paunch, the veins and thick membranes being represented upon it. Figure 316 is a flat, bladder-shaped canteen, provided with loops, to which is attached a twisted cord for suspension about the person. In the dwelling of

nearly every Moqui or Shimmo, two or three of these canteens may be found suspended from the rafters. The double-handled canteen shape is shown in ancient Egypt. Figure 317 is a curious pitcher from the San Blas Indians of Mexico. It is peculiar in its close resemblance to a large class of earthen vessels found in the *chulpus* or tomb-towers of Peru. It has two apertures, one on either side of the nearly circular hollow handle.



(Fig. 313.) Indian Jar. National Museum Exhibit.

Figure 318 is a light-colored earthen vessel for water,

made to resemble a mountain sheep by the Zunis of New Mexico. The pots of *lapis ollaris* collected by Schumaker from the islands off the coast of Lower California, — Santa Rosa, Santa Barbara, etc., — were hollowed out of the soft stone, and were a marked feature of the Indian exhibit.



(Fig. 314.) Mandan Cooking Pot. National Museum Exhibit.

The collection of black pottery from Peru was large and varied. The shapes

are most curious and will be sufficiently indicated by the Figures 319–323 without detailed description.

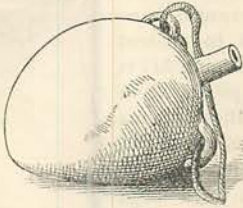


(Fig. 315.) Terra-Cotta Seed Pot. Yaquimas. National Museum Exhibit.

The similarity of many of the gro-

tesque terra-cotta vessels from the lower strata of the excavations of Hissarlik, in Asia Minor, and those of Peru is strik-

twenty-one and a half modern Roman barrels. It was used for storing produce, either liquid or dry. Some excavated



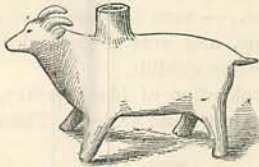
(Fig. 316.) Earthenware Canteen. Shimmos. National Museum Exhibit.

ing enough. Some of the pottery of old Ilium (if Schliemann's localization be correct) was turned on a wheel and some



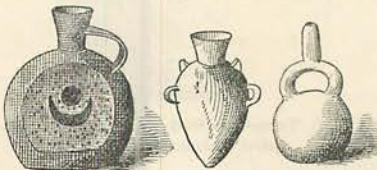
(Fig. 317.) San Blas Water Vessel. National Museum Exhibit.

molded by hand. The clay contains iron, and the degree of burning has affected the color. The black ware is believed to have derived its color from carbon in the form of lamp-black or bitumen. The white filling in the ornamentation is white clay. The excavations yielded pig-shaped and hippopotamus-shaped vessels. The nine enor-



(Fig. 318.) Zuni Water Vessel. National Museum Exhibit.

mous earthen jars found below the temple of Athena were nearly six feet high and over four feet in diameter. The



(Fig. 319.) Peruvian Terra Cotta. Peruvian Exhibit.

dolium, a large earthenware vessel of the Romans, held eighteen *amphoræ*, equal to



(Fig. 320.) Peruvian Terra Cotta. Peruvian Exhibit.

at Antium had sides three inches thick and abundantly large enough to serve in the "Forty Thieves" adventure. Di-



(Fig. 321.) Peruvian Terra Cotta. Peruvian Exhibit.

ogenes seems to have lived in one; the translation "tub" is a misnomer. The Roman *olla* was a large wide-mouthed flat-bottomed jar with a lid; it was used



(Fig. 322.) Peruvian Terra Cotta. Peruvian Exhibit.

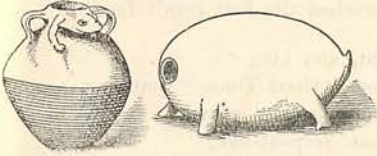
for storing grapes and also for cooking, like the French *pot-à-feu*.

The potter's kiln is shown in Egyptian paintings, and was also quite anciently known in Asia and Europe. It is

mentioned in the reply to Arcesilaus of the Pythian oracle, “ If you happen to find a furnace filled with earthen vessels,

Peru. It resembles in the shape of its seat and arms the Roman *sella curulis*, but has a different style of support.

The Uaupés of Brazil make large quantities of earthenware vessels of clay from the river mixed with the ashes of the



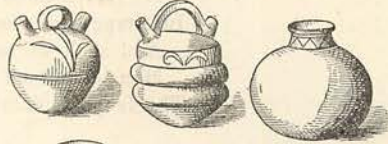
(Fig. 323.) Peruvian Terra Cotta. Peruvian Exhibit.

do not suffer them to be baked.” (Herod. iv., clxiii.) The potter’s wheel has been used in India and Ceylon from time im-



(Fig. 324.) Peruvian Chair. Peruvian Exhibit. memorial. To speak of the pottery, wheels, and kilns of China and Japan would be outside of our scheme.

Figure 324 is an earthen throne from



(Fig. 325.) Native Pottery from Paraguay. Argentine Republic Exhibit



caripé bark, and baked in a temporary furnace.

Earthen vessels from the Argentine Republic are shown in Figure 325, and resemble the Peruvian.

Edward H. Knight.

“ GOOD TIMES.”

Two happy words like far-off chimes
 Sound cheerily to men, “ Good Times.”
 Half-hushed in distance though they seem,
 Their peal calls back hope gone astray,
 And sings of help not far away, —
 A daily trust, a nightly dream.

Ah when, ah how, shall be fulfilled
 This deep desire, of God instilled?