is the staple food-crop of the district ; the next in importance is sugar-cane ; areca-nuts are also extensively grown ; and miscel­laneous crops include oil-seeds, vegetables, fruits, pepper, and cardamoms. Of the total area of 3797 square miles only 699 are returned as cultivated and 702 as cultivable. The chief manu­factures are coarse cotton cloths, rough country blankets or *kamblis,* iron implements, brass and copper wares, pottery, and jaggery. The district is also noted for its beautiful sandal-wood carving.

During the Mohammedan usurpation of Mysore from 1761 to 1799, unceasing warfare kept the whole country in constant turmoil. After the restoration of the Hindu dynasty Shimoga district repeatedly became the scene of disturbances caused by the mal­administration of the Deshasta Bráhmans, who had seized upon every office and made themselves thoroughly obnoxious. These disturbances culminated in the insurrection of 1830, which led to the direct assumption of the entire state by the British.

SHINTO. See Japan, vol. xiii. p. 581.

SHIP. The generic name (A. S. *scip,* Ger. *Schiff,* Gr. σκάφος, from the root *skap, cf.* “ scoop ”) for the invention by which man has contrived to convey himself and his goods upon water points in its derivation to the fun­damental conception by which, when realized, a means of flotation was obtained superior to the raft, which we may consider the earliest and most elementary form of vessel. The trunk of a tree hollowed out, whether by fire or by such primitive tools as are fashioned and used with singular patience and dexterity by savage races, represents the first effort to obtain flotation depend­ing on something other than the mere buoyancy of the material. The poets, with characteristic insight, have fastened upon these points. Homer’s hero Ulysses is instructed to make a raft with a raised platform upon it, and selects trees “withered of old, exceeding dry, that might float lightly for him ” (*Od*., v. 240). Virgil, glorifying the dawn and early progress of the arts, tells us, “Rivers then first the hollowed alders felt” *(Georg.,* i. 136, ii. 451). Alder is a heavy wood and not fit for rafts. But to make for the first time a dug-out canoe of alder, and so to secure its flotation, would be a triumph of primitive art, and thus the poet’s expression represents a great step in the history of the invention of the ship.

Primitive efforts in this direction may be classified in the following order: (1) rafts—floating logs, or bundles of brushwood or reeds or rushes tied together ; (2) dug- outs—hollowed trees ; (3) canoes of bark, or of skin stretched on framework or inflated skins (balsas) ; (4) canoes or boats of pieces of wood stitched or fastened together with sinews or thongs or fibres of vegetable growth ; (5) vessels of planks, stitched or bolted together with inserted ribs and decks or half decks ; (6) vessels of which the framework is first set up, and the planking of the hull nailed on to them subsequently. All these in their primitive forms have survived, in various parts of the world, with different modifications marking progress in civilization. Climatic influences and racial peculiarities have imparted to them their specific characteristics, and, combined with the available choice of materials, have determined the particular type in use in each locality. Thus on the north-west coast of Australia is found the single log of buoyant wood, not hollowed out but pointed at the ends. Rafts of reeds are also found on the Australian coast. In New Guinea catamarans of three or more logs lashed together with rattan are the com­monest vessel, and similar forms appear on the Madras coast and throughout the Asiatic islands. On the coast of Peru rafts made of a very buoyant wood are in use, some of them as much as 70 feet long and 20 feet broad ; these are navigated with a sail, and, by an ingenious system of centre boards, let down either fore or aft between the lines of the timbers, can be made to tack. The sea-going raft is often fitted with a platform so as to protect the goods and persons carried from the wash of

the sea. Upright timbers fixed upon the logs forming the raft support a kind of deck, which in turn is itself fenced in and covered over. @@1 Thus the idea of a deck, and that of side planking to raise the freight above the level of the water and to save it from getting wet, are among the earliest typical expedients which have found their develop­ment in the progress of the art of shipbuilding.

Whether the observation of shells floating on the water, or of split reeds, or, as some have fancied, the nautilus, first suggested the idea of hollowing out the trunk of a tree, the practice ascends to a very remote antiquity in the history of man. Dug-out canoes of a single tree have been found associated with objects of the Stone Age among the ancient Swiss lake dwellings *; nor* are specimens of the same class wanting from the bogs of Ireland and the estuaries of England and Scotland, some obtained from the depth of 25 feet below the surface of the soil. The hollowed trunk itself may have suggested the use of the bark as a means of flotation. But, whatever may have been the origin of the bark canoe, its construction is a step onwards in the art of shipbuilding. For the lightness and pliability of the material necessitated the invention of some internal framework, so as to keep the sides apart, and to give the stiffness required both for purposes of propulsion and the carrying of its freight. Similarly, in countries where suitable timber was not to be found, the use of skins or other water-tight material, such as felt or canvas, covered with pitch, giving flota­tion, demanded also a framework to keep them distended and to bear the weight they had to carry. In the frame­work we have the rudimentary ship, with longitudinal bottom timbers, and ribs, and cross-pieces, imparting the requisite stiffness to the covering material. Bark canoes are found in Australia, but the American continent is their true home. In northern regions skin or woven material made water-tight supplies the place of bark.

The next step in the construction of vessels was the building up of canoes or boats by fastening pieces of wood together in a suitable form. Some of these canoes, and probably the earliest in type, are tied or stitched together with thongs or cords. The Madras surf boats are perhaps the most familiar example of this type, which, however, is found in the Straits of Magellan and in Central Africa (on the Victoria Nyanza), in the Malay Archipelago and in many islands of the Pacific. Some of these canoes show a great advance in the art of construction, being built up of pieces fitted together with ridges on their inner sides, through which the fastenings are passed. @@2 These canoes have the advantage of elasticity, which gives them ease in a seaway, and a comparative immunity where ordinary boats would not hold together. In these cases the body of the canoe is constructed first and built to the shape intended, the ribs being inserted afterwards, and attached to the sides, and having for their main function the uniting of the deck and cross-pieces with the body of the canoe. Vessels thus stitched together, and with an inserted framework, have from a very early time been constructed in the Eastern seas far exceeding in size anything that would be called a canoe, and in some cases attaining to 200 tons burthen.

From the stitched form the next step onwards is to fasten the materials out of which the Hull is built up by pegs or treenails ; and of this system early types appear among the Polynesian islands and in the Nile boats described by Herodotus (ii. 96), the prototype of the modern “ nuggur.” The raft of Ulysses described by

@@@1 The raft of Ulysses described in Homer *(Od.,* v.) must have been of this class.

@@@2 See Capt. Cook’s account of the Friendly Islands, La Pérouse on Easter Island, and Williams on the Fiji Islands.