



THE HARD WOODS USED IN TURNERY AND WOOD ENGRAVING.

BY P. L. SIMMONDS.

Few but those who have looked into the subject would suppose that foreign woods were imported to the value of nearly twelve millions sterling annually, besides our own supplies of British oak and home-grown woods, which are utilised for various purposes. Notwithstanding the extensive adoption of iron for constructive purposes in ships and buildings, there has been no diminution in our consumption of foreign building woods. Indeed, the imports in the past two years show an increased value of one million and a quarter

over the imports of six or seven years ago. The second great class of woods—dye woods—has remained somewhat stationary, and this may arise from the extensive use of mineral dyes within the last few years. The class of foreign hard woods and furniture woods has, however, increased considerably in consumption within the past ten years, an indication of the greater demand for the purposes of Art and luxury, and possibly from the stimulus given by exhibitions, since that of 1851, which have served to bring into notice many new and beautiful woods previously unknown or disregarded. Since 1856 the value of the hard woods and ornamental woods imported into this country has doubled. It would be impossible in the compass of a brief article to pass under notice all the principal woods used for furniture, and we shall confine ourselves, therefore,

262

to a glance at the hard woods used by the turner and engraver. Several of these woods are also employed for other purposes, but we shall speak chiefly of their application in turnery.

The principal woods used by the turner are—African Black-wood, Angica, Barwood, and Camwood; Bully tree, Botany Bay oak, Box-wood, Brazil-wood, and Braziletto; Canary-wood, Cocus-wood, Coromandel, Ebony, Fustic, Iron-wood, Jack-wood, King-wood, Letter-wood, *Lignum vite*, Madagascar Red-wood, Nutmeg-wood, various Palms, Partridge, Princes' and Purple woods, Queen-wood, red Sanders, Rosewood, Satin, Tulip, Yew, and Zebra-wood. Of these we shall now proceed to speak *seriatim*.

Of the sources of the African black-wood nothing certain is known. It is referred by some to the *Cocobolo prieto*, from Madagascar and

Eastern Africa, a tree which we cannot trace. Possibly it may be from *Azelia Africana*, but more probably it is the black iron-wood, or South African ebony, *Olea laurifolia*, a most valuable hard wood, brownish, close, and heavy; excellent for turning and carving, and much used in the Cape colony by cabinet-makers. Angica is a Brazilian wood, which is used also by cabinet-makers. The tree producing it has not been correctly determined, but is believed to be a species of *Aylanthus*. The barwood and camwood of commerce, although imported under distinct names and from different parts of Western Africa, are both the product of the same tree, *Baphia nitida*. The wood yields a brilliant red colour, which is used for giving the red hue to English bandana handkerchiefs. It is not a permanent colour, however, and is rendered deeper by sulphate of iron. We

263

imported in 1861, 1,154 tons of camwood, valued at £20,457, and 2,075 tons of barwood, valued at £6,171. These woods may be distinguished by their rich purplish tinge. The bully tree or beef-wood is said to be a South American wood, obtained from British Guiana, and has been referred, but erroneously, to *Robinia panacoco*. The wood passing under the name of "panacocco" is *Ormosia coccinea*. Botany Bay oak, sometimes called beefwood, is the trade name for the wood of *Casuarina stricta* and other species of *Casuarina*, of New South Wales. Among those which were sent to the recent Exhibition by the colony, were the forest or shingle oak, or beefwood (*C. suberosa*), a wood of great beauty, but only fit for veneers; the spreading oak, swamp oak, and white oak, all woods of little value in

an ornamental point of view. Some of the wood imported under the name of Botany Bay oak is well adapted for inlaying and marquetry. It is of a light yellowish brown colour, often marked with short red veins. One variety is extremely beautiful, and nearly as hard as tulip-wood. It is finely dappled with rich intertwining strokes, on a high flesh-coloured ground.

Boxwood is one of the most important hard woods which we receive for the special uses to which it is applied. The mediæval collections testify to the exquisite skill of some of the old wood carvers on this material. Boxwood is also of great use to the turner, the mathematical instrument maker, the musical instrument maker, and the wood engraver. The largely extended use of woodcuts in the illus-

264

trated literature of the day has led to an universally increased demand for this the best material known for the purpose. Whether all the boxwood imported is furnished by *Bucos sempervirens*, is not known. It is, however, not improbable that *B. balearica*, a larger species, may furnish some of that which comes from the Mediterranean. The wood of this species is coarse, and of a brighter yellow than the common species. Rondelet, in a table of the mean heights of trees, gives that of the trunk of the box at 16 feet, and the mean diameter at 10½ inches. In 1820 the imports of foreign boxwood were 363 tons, the duty being as high as £7 18s. 6d. per ton, and on that from British possessions £1 13s. 4d. In 1831 the imports had risen to 484 tons, the duty having been reduced in 1826 to £5 on foreign grown, and £1 on British grown. The duty is now only 1s. per ton for statistical purposes. The average imports of the last three years have been about 3,500 tons, showing the great increase of the trade

in this important wood. The value in 1860 was about £11 per ton, and in 1861, £10. From the Russian port of Soukoum Kali, in the Black Sea, 1,450 tons of boxwood, valued at £10,384, were shipped in 1861 to Constantinople; the greater part of this was sent on to England. The market price of the wood at Soukoum Kali was 4s. 2d. the poed of 36 lbs. But little boxwood of any size is to be obtained now in the United Kingdom, and we draw our chief supplies from Turkey; while France depends much on Spain.

The importance of finding some wood calculated to come in to the aid of boxwood, the most generally useful of all the European hard woods, has long been felt. Notice was drawn to the subject at the Madras local exhibitions a few years ago, and it has occupied attention in several of our colonies. Among the large and varied collections of woods from different countries, shown at the recent Exhibition, we did not notice any which, upon trial, appeared

265

3 r

adapted for the purpose. We may, however, incidentally mention those which have been pointed out as suited for wood engraving. The essential properties requisite for this purpose are uniformity of structure, and considerable toughness, hardness, and retention of any sharp angles to which it may be cut, whether on the end or on the side—colour, except for certain purposes, is of little consequence. Dr. Hunter, of Madras, has furnished the following results of experiments on woods for engraving, made under his superintendence at the School of Arts, Madras:—The guava-wood (*Psidium pyriferrum*), though close grained and moderately hard, with a pretty uniform texture, was found to be too soft for fine engraving, and did not stand the pressure of printing. It answered well for bold engraving and blocks for large letters, and for this purpose has

been used for several years. The small wood from hilly districts was found to be harder and finer in the grain than that from large trees. Satin-wood proved to be hard, but uneven in the grain, coarse in the pores, and, like many other large woods, harder and denser in the centre than near the bark. As it was found to splinter under the graver, it was condemned. The small dark-coloured kinds of sandal wood of 5 inches in diameter, grown on a rocky soil, proved to be the nearest approach to boxwood in working quality, hardness, and durability under pressure. It cuts smoothly, the chips curl well under the graver, and the oily nature of the wood seems to preserve it from splitting when cut. Many hundred engravings have been executed upon this wood, and some blocks have yielded upwards of 20,000 impressions without being worn out. The question of price

266

has, however, to be taken into consideration, in order to see if it can compete with boxwood in England. Two species of *Wrightia* were experimentalised on without success. The palay (*Wrightia tinctoria*) has a pale, nearly white wood, close and uniform in the grain, but too soft to stand printing. It cuts smoothly, but does not bear delicate cross-hatching. Although unfit for wood-engraving, it is well suited for turnery, carving, and inlaying with darker woods. Veppaley-wood (*W. antidysenterica*), on inspection under the microscope, appeared to be suitable for the purpose, from the closeness of texture and the polish left by the chisel in cutting it across the grain; but the uneven quality and the softness of the outer parts showed that it was not fit for engraving. The wood of the wild orange bears a strong resemblance in appearance to box in

working qualities, and is often as hard. The wood of the wild Ber tree (*Zizyphus jujuba*), common almost everywhere in India, gave good promise under the microscope, but proved to be a soft, spongy, light wood, that did not stand cross-hatching or pressure. A small garden tree, the China box (*Murraya exotica*), proved on trial to be like the wood of many of the orange family—hard and close in the grain near the centre, but softer near the bark. The cross section was, however, very irregular. The wood of the coffee tree was found to be soft, uneven in the grain, and not fit for engraving, though well adapted for ornamental carving or inlaying. This wood works beautifully on the turner's lathe, and cuts very sharply under the chisel, gouge, or graver; it is deserving of more attention for ornamental carving and inlaying. It harmonises well in colour with

267

the wood of orange and that of the Manilla tamarind (*Inga dulcis*). There are a few other woods which may be incidentally noticed. The white beech (*Fagus sylvestris*) is much used for carved moulds, for picture frames, and large wood letters for printing. It is easily worked, and may be brought to a very smooth surface. The extremely hard wood of the white-thorn (*Crataegus punctata*) is used by wood engravers, and for mallets, &c. The dogwood (*Cornus florida*) is well adapted for the same purposes as boxwood. It is so remarkably free from silex, that splinters of the wood are used by watchmakers for cleaning the pivot-holes of watches, and by the optician for removing the dust from small lenses. The wood of the olive has occasionally been used for engraving. A very compact, fine,

and uniform wood (*Dodonaea viscosa*), procured from the Neilgherries, under the name of iron-wood, used for turnery and making walking-sticks, worked well under the graver and on the turning lathe; but the piece sent was too small to print from. The close-grained wood of *Podocarpus nerifolius*, a Burmese tree, has been suggested as a substitute for boxwood, but I have not heard that it has been tried. Another close-grained but undefined wood, locally called Baman, much used by the Karens for bows, has been also pointed out as probably adapted to take the place of box. The white, close-grained wood of *Gardenia lucida* is apparently well adapted for turning. This wood, like that of several other species of *Gardenia* and *Randia*, is used by the Burmese for making combs. A kind of plum-wood,

268

rather coarse in the grain, is used in China for cutting blocks for books. As a good deal of wood-block printing is carried on in Japan, it would be interesting to ascertain what wood is used by this intelligent and ingenious people for the purpose. Both the stone-wood (*Callistemon salignus*), a remarkably hard wood found sparingly distributed in Gipps Land, and the *Pittosporum bicolor*, have been used in Victoria for wood engraving. The wood of *Pittosporum undulatum*, from New South Wales, was brought forward here by the commissioners of that colony last year as calculated to be serviceable for wood engraving. Although favourably reported upon by the late Mr. P. Delamotte, it is not likely to be of much use to the wood engraver here. Mr. Delamotte stated that although the samples of wood he received were probably inferior ones, having been felled at the wrong season of the year, yet it was well adapted for certain kinds of wood engraving. It is superior to the pear and

other woods, generally used for posters, and is the produce of a small tree, with very close-grained, hard, white wood. When seasoned carefully, it would be well suited for turning. Sound transverse sections of more than 10 to 16 inches are, however, rare. The boxwood of Tasmania (*Bursaria spinosa*), another of the *Pittosporums*, which is very close and even-grained, of a yellowish colour, unmarked, has the appearance of being well adapted for wood engraving. The *Celastrus rhombifolius*, a dense, hard, and heavy yellow box-like wood of the Cape colony, where it is called Pendoom, might be useful to turners and musical instrument makers, especially for flutes, clarionets, &c. It is much used in turnery, but does not grow to any size, never exceeding 4 to 5 inches in diameter. The cork-wood of New South Wales (*Duboisia Myoporoides*) is almost as light as the wood of the lime, very close-grained and firm; but easily cut, and hence especially adapted for wood carving.

269

3 z

Leaving the engraving woods, we now pass on to the commercial woods of the turner. Brazil-wood and Braziletto are the produce of leguminous trees, at one time much in demand as dye-woods. The former is the produce of *Caesalpinia echinata*: it grows abundantly in South America, and is imported chiefly from Pernambuco and Costa Rica: hence it is sometimes called Pernambuco-wood. When first cut it is of a light colour, but becomes a dark red on exposure to the air. The peach-wood, Nicaragua-wood, and Lima-wood of commerce, are supposed to be produced by the same tree. The imports of Brazil-wood in 1861 were 5,101 tons, valued at £102,262. Braziletto wood is furnished by *C. Brasilensis*, which grows in Jamaica and other parts of the West Indies to the height of about 20 feet. This wood is much used for ornamental cabinet work, and both species are employed in turnery and for

making violin bows. Canary-wood is obtained from the *Laurus indica* and *L. canariensis*, trees natives of Madeira and the Canaries. Cocus-wood, or Kokra, is said to be obtained from Cuba and other West Indian islands, and is referred to *Lepidostachys Roxburghii*. It is much used in turnery, and for making flutes and other musical instruments. It is a wood of small size, being usually imported in logs of about 6 or 8 inches diameter. The album is of a light colour, while the heart-wood is of a rich deep brown, and extremely hard. Calamander, or Coromandel-wood, is obtained in Ceylon, from *Diospyros hirsuta*. It is a scarce and beautiful wood, exceedingly hard, fine, close-grained, and heavy. It consists of pale reddish-brown fibres, crossed by large medullary plates, or isolated elongated patches of a deep rich brown colour, passing into black. These latter are chiefly conspicuous in well-defined veins and broad

270

useful wood of a pale colour, well adapted for carver's and turner's work. One of the most complete, extensive, and tastefully designed applications of the hard or fancy woods of commerce was the model of the Royal Exchange, shown by Messrs. Robert Fautleroy & Co., in which there were specimens of more than five hundred ornamental woods from different parts of the world.

We may close with a word or two on a few other woods occasionally used. The mountain ash (*Pyru: aucuparia*), the "rowen tree" of Scottish song, yields a beautiful light wood, quite equal to satin-wood in appearance, and, as well as holly, box, horse chestnut, and apple, very serviceable in inlaying. The root and burr of *Quercus pedunculata*, and *Q. sessiliflora*, also rival many foreign woods. The close texture of the maple-wood, with the beauty of its grain and its susceptibility of a high polish, doubtless contributed to its continued

use for the manufacture of the pledge cup and wassail bowl. Hence its Scandinavian name of *mazer* came to be applied to the cup made from the wood of the tree; and when, at a later period, other woods, and even the costliest metals, were substituted, the old designation of the mazer cup was still retained. The late Mr. T. H. Turner, in a series of papers in the *Archeological Journal*, on "The Usages of Domestic Life in the Middle Ages," remarks:—"Our ancestors seem to have been greatly attached to their mazers, and to have incurred much cost in enriching them. Quaint legends in English or Latin, monitory of peace and good fellowship, were often embossed on their metal rim and on the cover."

P. L. SIMMONDS.

278