these rivers belong. Some of the species exceed a length of 3 feet. In the United States, where two species, Trionyx muticus and Trionyx ferox, occur, the flesh of the latter is said to be most delicate to eat, far surpassing in flavour that of the green turtle. (A. C. G. )

TORTOISESHELL. The tortoiseshell of commerce consists of the epidermic plates of the hawksbill turtle, *Caretta imbricata.* The plates of the back or carapace, technically called the head, are 13 in number, 5 occupying the centre, flanked by 4 on each side. These overlap each other to the extent of one-third of their whole size, and hence they attain a large size, reaching in the largest to 8 inches by 13 inches, and weighing as much as 9 ounces. The carapace has also 24 marginal pieces, called hoofs or claws, forming a serrated edge round it ; but these, with the plates of the plastron, or belly, are of inferior value. The plates of tortoiseshell consist of horny matter, but they are harder, more brittle, and less fibrous than ordinary horn. Their value depends on the rich mottled colours they display—a warm translucent yellow, dashed and spotted with rich brown tints—and on the high polish they take and retain. The finest tortoiseshell is obtained from the Eastern Archipelago, particularly from the east coast of Celebes to New Guinea ; but the creature is found and tortoiseshell obtained from all tropical coasts, large supplies coming from the West Indian Islands and Brazil.

Tortoiseshell is worked precisely as horn; but, owing to the high value of the material, care is taken to prevent any waste in its working. The plates, as separated by heat from the bony skeleton, are keeled, curved, and irregular in form. They are first flattened by heat and pressure, and superficial inequalities are rasped away. Being harder and more brittle than horn, tortoise­shell requires careful treatment in moulding it into any form, and as high heat tends to darken and obscure the material it is treated at as low a heat as practicable. For many purposes it is necessary to increase the thickness or to add to the superficial size of tortoise­shell, and this is readily done by careful cleaning and rasping of the surfaces to be united, softening the plates in boiling water or sometimes by dry heat, and then pressing them tightly together by means of heated pincers or a vice. The heat softens and liquefies a superficial film of the horny material, and that with the pressure effects a perfect union of the surfaces brought together. Heat and pressure are also employed to mould the substance into boxes and the numerous artificial forms into which it is made up.

Tortoiseshell has been a prized ornamental material from very early times. It was one of the highly esteemed treasures of the far East brought to ancient Rome by way of Egypt, and it was eagerly sought by wealthy Romans as a veneer for their rich furniture. In modern times it is most characteristically used in the elaborate inlaying of cabinet work known as buhl furniture. It is also employed as a veneer for small boxes and frames. It is cut into combs, moulded into snuffboxes and other small boxes, formed into knife-handles, and worked up into many other similar minor articles. The plates from certain other tortoises, known commercially as turtle-shell, possess a certain industrial value, but they are either opaque or soft and leathery, and cannot be mis­taken for tortoiseshell. A close imitation of tortoiseshell can be made by staining translucent horn. See Comb, vol. vi. p. 178.

TORTOLA. See Virgin Islands.

TORTONA, a town of Italy, in the province of Ales­sandria, on the right bank of the Scrivia, at the northern foot of the Apennines, 13 miles to the east of Alessandria, was formerly a place of strength until its fortifications were destroyed by the French after Marengo (1799); the ramparts are now turned into shady promenades. The cathedral, erected by Philip II., is architecturally uninter­esting, but contains a remarkably fine Roman sarcophagus. Silk-weaving, tanning, and hat-making are the chief indus­tries ; and there is some trade in wine and grain. The population in 1881 was 9023 (commune 14,442).

Dertona is spoken of by Strabo as one of the most important towns of Liguria, and is alluded to by Pliny as a Roman colony. In the Middle Ages it was zealously attached to the Guelphic cause, on which account it was twice laid waste by Frederick Barbarossa (in 1155 and 1163).

TORTOSA, a fortified city of Spain, in the province of Tarragona, and 40 miles by rail to the south-west of that town, is picturesquely situated on the left bank of the Ebro (here crossed by a bridge of boats), 22 miles above its mouth. It is for the most part an old walled town, with narrow, crooked, and ill-paved streets ; the houses are lofty, and massively built of granite. The slope on which it stands is crowned with an old ruined castle, com­manding a splendid view. The cathedral is a conspicuous building near the river ; it occupies the site of a mosque built in 914 by 'Abd al-Rahmán ; the present structure, which dates from 1347, has its Gothic character disguised by a classical façade with Ionic pillars and much tasteless modernization. The stalls in the choir, carved by Cristo­bal de Salamanca in 1588-93, and the sculpture of the pulpits, as well as the ironwork of the choir-railing and some of the precious marbles with which the chapels are adorned, deserve notice. None of the other public build­ings, which include an episcopal palace, a town-hall, and numerous churches, require special mention. The manu­factures of Tortosa include paper, hats, leather, porcelain, majolica, soap, and spirits. There is an important fishery in the river, and an active trade is carried on through the harbour, which is accessible to vessels of 100 tons burden, corn, wine, oil, wool, silk, fruits, and liquorice (a specialty of the district) being among the leading articles of export. Near Tortosa are rich quarries of marble and alabaster, and the whole surrounding country is very fertile and beautiful. The population within the municipal boundaries in 1878 was 24,057.

Tortosa, the Dertosa of Strabo aud the Colonia Julia Augusta Dertosa of numerous coins, was a city of the Ilercaones in Hispania Tarraconensis. Under the Moors it became a place of great import­ance as the key of the Ebro valley. It was taken by Louis the Pious in 811 (after an unsuccessful siege two years before), but was soon recaptured. Having become a haunt of pirates, and exceed­ingly injurious to Italian commerce, it was made the object of a crusade proclaimed by Pope Eugenius III. in 1148, and was accord­ingly captured by Raymond Berengar, assisted by Templars, Pisans, aud Genoese. Tortosa fell into the hands of the duke of Orleans in 1708, and was again surrendered in the War of Independence in 1811 to the French under Suchet, who held it till 1814.

TORTURE. It is proposed to treat in this place not so much the innumerable modes of inflicting pain which have been from time to time devised by the perverted ingenuity of man as the subject of legal torture as it existed in the civilized nations of antiquity and of modern Europe, that is to say, torture inflicted with more or less appearance of legality by a responsible executive or judi­cial authority. From this point of view torture was always inflicted for one of two purposes—(1) as a means of eliciting evidence from a witness or from an accused person either before or after condemnation, (2) as a part of the punishment. Torture, as a part of the punishment, may be regarded as including every kind of bodily or mental pain beyond what is necessary for the safe custody of the offender (with or without enforced labour) or the destruc­tion of his life,—in the language of Bentham, an *afflictive* as opposed to a *simple* punishment. Thus the unnecessary sufferings endured in English prisons before the reforms of Howard (see Howard and Prison Discipline) and the drawing and quartering in the old executions for treason fall without any straining of terms under the category of torture. The whole subject is now one of only historical interest as far as Europe is concerned. It was, however, up to a comparatively recent date an integral part of the law of most countries (to which England, Aragon, and Sweden@@1 formed honourable exceptions), as much a commonplace of law as trial by jury in England. One reason for its long continuance was no doubt the view taken in an age of judicial perjury@@2 that truth was only to be attained by violent means, if not by torture then by ordeal or trial by battle. Speaking generally, torture may

@@@1 But even in these countries, whatever the law was, torture certainly existed in fact.

@@@2 Hallam, Middle Ages, vol. i. p. 282.