roller (which requires very little force, as it is a slow mo­tion), all parts of the butt are pressed as pulled through by the rollers ; the next comes in order by the assistance of the strings ; and so on, until the whole of the hides in the belt have been pressed, and deposited in the fluid on the other side of the pit. By a detent the motion is now revers­ed, when the belt is again pressed, and returned to its ori­ginal position for a fresh supply of ooze. This sim­ple plan brings strong ooze so fre­quently into the interstices of the hide, that the cen­tre of a stout butt is not only stain­ed through, but tanned, in be­tween one and two months ; calf­skins and kips are tanned in from twenty to thirty days ; and the liquors are so rapidly exhausted, that they are reduced from 45° to nothing in thirty-six days, losing at first more than 2° per day ; and the shortness of this exposure to the air prevents much of the tannin from being decomposed. At Nailsea, near Bristol, 100 butts per week are tanned, with six latches, six rolling pits, twenty-four handlers for the offal, and six layers ; one horse power drives the rollers, and two boys manage them. The following are given to us as the results produced in the first yard which was put en­tirely on the patent plan, as compared with those of the same yard on the old plan. Double the work is done, and half the capital drawn out as useless. The saving on bark, labour, and general cost of manufacture, is 11/8d. per lb. The increase in the weight of butt leather is as 34 lh. to 28 lb. ; 461/2lb. of leather being produced from a 60 lb. wet salted hide. The butts are sent to market within four months from the time the hides are delivered to the yard. The profits from quick return, great weight, and small expense, are eight times as great as on the old plan, at similar prices of hides, bark, and leather. The leather is more elastic and more impervious to wet than any other that is made.

Oak bark was formerly the only substance used in tan­ning; but large quantities of valonia and terra japonica are now imported for the purpose ; and recently a bean pod called divi-divi has excited attention. These substances have lessened the demand for oak bark, of course lessening the price, and rendering it not so needful to cut down oak for the sake of the bark. Valonia gives to leather great solidity and weight : the colour inclines to gray, while there is a considerable quantity of bloom on its surface. The co­lour of terra japonica leather is dark fawn, inclining to red ; it is light, spongy, and very pervious to water : while that from oak bark is well known to be a light fawn, and docs not resist water so well as that from valonia. These differ­ences arise from the varying proportions of tannin, extrac­tive colouring matter, and vegetable acids present ; and as the tanner has the prejudices of his buyers to consult, he se­lects that material, or mixture of materials, which best suits his locality. There are other vegetable productions which contain tannin. Sir H. Davy estimates 1 lb. of catechu (terra japonica) as equal to 21/4 of galls, 3 of sumach (which also contains oxalic acid), 71/2 of the bark of the Leicester willow, 81/2 of oak bark, 11 of the bark of the Spanish chest­nut, 18 of elm bark, and 21 of common willow bark. Few barks are entirely free from it ; and recently patents have been taken out for using the bramble and the hop-bine in tanning ; but they possess the serious inconvenience of re­quiring very much latch-room.@@1

In trying the quantity of tannin by Seguin’s process, that is, by precipitating it with solution of gelatine, 480 grains of the bark in coarse powder should be acted on by half a pint of boiling water. The mixture should be frequently stirred, and suffered to stand twenty-four hours ; the fluid should then be strained through a linen cloth, and mixed with an equal quantity of solution of gelatine, made by dis­solving glue, jelly, or isinglass, in hot water, in the propor­tion of a dram of glue or isinglass, or six table-spoonfuls of jelly, to a pint of water. The precipitate should be col­lected by passing the mixture of the solution and infusion through folds of blotting paper, and the paper exposed to the air till its contents are quite dry. Every 100 grains of precipitate contains 40 grains of tannin nearly.

When butts or crops are tanned, they are taken out and hung up to dry; but once or twice during drying they are placed upon a bench which is cylindrical and inclined to the horizon. Upon this they are struck or smoothed with a square bar, the surface being occasionally wetted. When the drying is sufficiently advanced, they are rolled with a brass roller about nine inches wide, loaded with from 15 cwt. to 30 cwt. This operation is called finishing.

TANORE, a decayed town on the sea-coast of Malabar. It is thirty miles south by east from Calicut. Long. 75. 55. E. Lat. 10. 55. N.

TANTALUS, in fabulous history, king of Phrygia and Paphlagonia, was the son of Jupiter and the nymph Plota. He one day entertained the gods at his table, when, to prove their divinity, he served up his son Pelops cut in pieces. All the deities, except Ceres, perceived his cruelty and impiety, and would not touch his provisions. That goddess, whose thoughts were solely employed about her daughter Proserpine, inadvertently ate a part of his left shoulder. Pelops, however, was restored to life, and an ivory shoulder given him in the room of that which had been eaten ; while Tantalus was thrown into Tartarus, where he was punished with perpetual hunger and thirst. He was chained in a lake, the water of which reached up to his chin, but retired when he attempted to drink. The branch of a tree loaded with fruit hung down even to his lips, but on his attempting to pluck the fruit the branch sprung upwards.

TAOO, one of the Friendly Islands, in the South Pacific Ocean, about twenty-four miles in circumference.

TAORMINA, a town in Sicily, situated on a high rock, and eighty-eight miles south of Messina. A colony from the isle of Naxos settled at the foot of Ætna, at no great distance from the shore, and at about a league or a league and a half from the present situation of Taormina. Dio­nysius the tyrant attacked this colony, and either took or set fire to their city. The inhabitants retired to the rocks of Mount Taurus, among which they found a tract of ground sufficiently level and secure, and of sufficient ex-

@@@, Terra japonica is the dried extract of acacia catechu, and obtained at Kauhauna in Hindustan. The name catechu means in the native language the juice of a tree. Dr Thomson says it is composed of

Tannin 54·5

Peculiar extractive matter. 34·

Mucilage 6∙5

Insoluble matter, chiefly sand and lime S∙

100·