the bark of birch will anſwer the purpoſe of tanning even ſole leather, which, it is well known, requires the ſtrongeſt and moſt penetrating materials@@\*.

A long memoir, written by Μ. Gleditſch, recommends the leaves, branches, fruit, and flowers, of a vaſt number of plants as ſubſtitutes for oak bark. Heath dried and pulveriſed, gall nuts, and the bark of birch, are said by Μ. Geſner to be uſed in different provinces of Germany. Abbé Nollet informs us, that the leaves of myrrh are uſed by the tanners in Naples. In Corſica they make uſe of the leaves of wild laurel dried in the ſun and beaten into powder, and in the iſland of St Kilcia they tan with the tormentil root. In ſome parts of Italy leather is tanned with myrtle leaves. In Russia, it is ſaid, that leather is tanned with the bark of willow : and it may here be observed, that a late writer has recommended the extract of bark to be made in America, in order to leſſen the expence of freight, &.c. in conveying the bark itſelf to Europe.

In the year 1765, the Society of Arts, &c. granted a premium of L. 100 for the diſcovery of a method of tan­ning with oak ſaw-duſt ; which method has been adopted in Germany : and the Reverend Mr Swaine has lately revived the exploded ſubſtitute (mentioned by Gleditſch and others) of oak leaves.

The following propoſal was communicated to the Bath Society for extracting the eſſence of oak bark :

Suppoſe (says the author) the operator has at hand a com­mon family brew-houſe, with its neceſſary utenſils ; let him procure a ton of good oak bark ground as usual for the pit; and having placed a strainer to the maſh-tub, fill it two- thirds with the bark ; heat as much water, nearly boiling, as will ſufficiently moiſten it, and mash it well together. After it has stood about two hours, draw it off clear, and put it into a caſk by itſelf. Make a second extract with a ſmaller quantity of boiling water than before, ſo as to draw off a quantity nearly equal to the firſt, and put that alſo into the ſame caſk with the former.

Theſe two extracts will probably contain in them as much of the virtues of the bark as the quantity of liquid will absorb.

A third extract, rather more in quantity than the other two, may be made from the ſame bark, and as soon as drawn off, ſhould be returned into the copper again when empty, and employed for the firſt and second maſh of a quantity of freſh bark, as the three extracts may be ſuppoſeſt to have carried off the virtues of the firſt. Then proceed as before till all the bark is ſteeped, and a ſtrong liquid extract is drawn from it. The bark, when taken out of the copper, may be ſpread in the ſun to dry, and ſerve as fuel in the succeeding operations.

The next proceſs is, to evaporate the watery particles from the extract by a gentle heat, till it comes to the conſiſtence of treacle. This may be done either by the air and beat of the ſun, or by the ſtill or iron pan over the fire.

Anthony Day, Eſq; of London, obtained a patent, dated 17th July 1790, for a new method of tanning, “with half the bark in half the usual time.” This plan chiefly conſiſts in concentrating the bark into a ſtrong extract, and in ſome mechanical improvements in the conſtruction of the tan-yard. But neither the one nor the other have yet been adopted.

The 12th May 1795, a patent was granted to Mr Tuc­ker of Wickham, Hants. He propoſes that the vat, made of wood, be incloſed in a metallic coating or copper pit, com­pletely ſoldered, to prevent the eſcape of any of the fluid. This is to be ſurrounded with a caſe of brick-work, leaving an interſtice of a few inches ; and a fire is to be made in a grate near the bottom of the pit, to keep the ooze mode­rately warm, and thus to ſhorten the proceſs. But the great expence of theſe triple pits and of the fuel, it is to be feared, will counterbalance any advantages which might otherwiſe be derived from this invention.

Monſieur Seguin of Paris has lately ſubmitted to the French Convention a new method of tanning, which is ſaid to poſſess wonderful advantages. He has certainly exploded the ignorant and abſurd ſyſtems of the French tanners, which we have above hinted at, and has ſhown much ingenuity and chemical knowledge in the proſecution of his discoveries ; but his leading principles item, in fact, to be nearly ſimilar to thoſe which have been long known and practiſed in England.

An ingenious manufacturer in London has, by the application of warm air, conveyed by means of flues from ſtoves properly conſtructed, and by other contrivances not generally known, conſiderably abridged the usual proceſs of tan­ning. Some experiments have likewiſe been lately made with the bark of aſh and of horſe-cheſnut.

A ſubſtitute for oak bark, the price of which has lately been enormous, is the grand *deſideratum* in the manufacture of leather. Moſt of thoſe above enumerated have hitherto been found ineffectual ; but a patent, bearing date 16th Ja­nuary 1794, has been granted to Mr Aſhton of Sheffield, Yorkſhire, f*or* his diſcovery of a cheap and expeditious me­thod of tanning leather. This method chiefly conflits in applying a preparation of mineral ſubſtances inſtead of oak bark. Thoſe which, on account of their cheapneſs, are moſt to be preferred, are the droſs of coal-pits, called *ſulphur-stone* or *pyrites,* and the yellow ferruginous earth or red ochre ; and, in general, all aſtringent, ſulphureous, or vitriolated ſubſtances.

If this discovery, which is yet in its infancy, ſhould prove ſucceſsful, it may cauſe a material alteration in the proceſs of this manufacture ; and by reducing the expence, may ul­timately be of great advantage to the public. Many other experiments are now making in England for the improve­ment of tanning ; and as there are many persons of ingenui­ty and knowledge engaged in the leather manufacture, much may be expected from their induſtry and ſkill.

As the acts of Parliament reſpecting leather, &c. are very numerous, and many of them almoſt obſolete, we ſhall refer our readers to Burn’s Juſtice, or to the Statutes at Large. We cannot, however, help remarking, that the act of 1 James I. cap. 22. which preſcribes the mode and manner in which leather ſhall be tanned, the materials to be uſed, and the time to be employed, is ſo palpably abſurd and oppressive, that it ought to be immediately repealed.

The revenue ariſing from the duty on leather tanned in Great Britain (excluſive of oiled leather) is upwards of L. 200,000 *per annum.*

TANTALUS, in fabulous hiſtory, king oſ 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 eat 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.

@@@[m]\* Mem. Acad. Sc. Paris, 1786.