Leather as used in Bookbinding.¹

IN mediæval times leather was not used for binding the more finely illuminated MSS., but only for the simpler kinds. The skins of the goat, calf, sheep, and pig were mostly made use of, but the goat skin was always held in the highest estimation, and bore more ornamentation. In England goat skin, ungrained, was used from very early times; in it the copy of the Winchester Domesday Book of the twelfth century is bound, then in the fifteenth and sixteenth centuries work was also done in deer skin and sheep skin, the latter for the commoner books.

In Oriental countries for commoner books thin sheep skin was much employed, and for finer and more delicately ornamented work and the curious open work of Persia, calf was the favourite leather; on the Continent, in France, almost all the first-rate work, old and new, is executed in goat skin, and in Germany, calf, vellum, and pig skin.

The leathers now used by bookbinders are specially prepared and dressed for that purpose. They are kept soft, and as far as possible of an uniform thickness.

Animal skins are prepared and made useful for bookbinding in two ways: firstly, by tanning, and secondly, they are made into vellum or parchment by an elaborate process in which lime is the chief agent. There is a third way of treating skins by means of which soft leather, like "chamois," is produced, but as far as I know these are not used for bookbinding purposes.

Tanning is the most important of these processes, and the value of it is due to the chemical combination of tannic, gallic, or other acid, with the gelatine, gluten, or albumen, of the animal skin, with which it forms a very insoluble compound, which is the basis of leather as we know it. This process is afterwards modified by the subsequent currying and dressing of the skin.

¹ Read at the Twentieth Annual Meeting of the Library Association, London, October, 1897.

Tannic acid or "Tannin" is most readily obtained from a solution of some vegetable bark, that of the oak being perhaps the best ; but it is also obtained from that of the hemlock, chestnut, larch, spruce, sumac, and for light coloured leathers from the willow. Besides these vegetable barks, however, other substances will produce a similar effect upon an animal skin, the most important of these are the mineral salts of iron or chromium, and alum, but this is properly known as "tawing," and not tanning, and it is probable that for bookbinding purposes the bark tanned leather is much the best.

Bark tanning is a tedious and slow process, and any way of quickening it is likely to meet with favour in these days, but it seems probable that the old-fashioned slow method is really the best in the long run.

Technically, the outer side of the leather is called the grain side, and the other the flesh side, and the term "leather" does not include skins dressed with the hair or fur on. Books, however, are rarely bound in this way, although I have seen some instances. By the help of the specimens I have brought with me I will now endeavour to show you the peculiarities and differences existing with regard to the most important leathers now in use for bookbinding.

In the first rank comes goat leather, known as Morocco—in reference to the place whence it is supposed to have first come. It is mostly imported from Norway, Germany, Switzerland or the Cape in a dried state, and is tanned and dyed in England. Its qualities are great firmness of texture with flexibility, and it possesses the valuable and beautiful property of assuming a grain as its outer side when treated in a particular way. The skin is dampened and rolled by the hands of a skilled workman, and after treatment for a short time the surface assumes a permanent grain. This grain depends in form primarily upon the intimate texture of the piece of leather itself, but by skilled manipulation it can be to a certain extent modified by the workman. The chief varieties are known as levant grain, hard grain, and straight grain, and these again are often polished down with a hot iron. Grained morocco is stronger than ingrained, as there is an appreciable shrinkage, and consequent closing of texture in the process. Ungrained morocco, not necessarily of the first quality, is a very valuable leather, soft and strong, and all kinds of morocco take the beautiful process known as gold-tooling to perfection. The French historian, De

Thou, a great lover of books in the sixteenth century, had several of his books bound in morocco skins which had been stamped all over with outline impressions from large wood blocks, and these were afterwards finished in gold, irrespective of the pattern upon them, the result being irregular but very charming.

The next most important leather is CALF. The skins are usually imported dried from Russia, Sweden, or Denmark, and are tanned and dyed in England. The surface of calf leather is extremely smooth, and it will take the finest gold-tooling, but it is so delicate that the difficulty of keeping it clean is very great. It was largely used in Germany about the sixteenth century for beautiful cut work combined with some staining, and is now used with charming effect in the somewhat similar work done by Miss Alice Shepherd, of Bath. Apart from its adaptability to ornamental decoration, modern calf is not altogether satisfactory—it does not last well. It takes stains and dyes easily, and is often found with tree-marbling, sprinkling, or other supposed improvements upon it, the chief result of which appears to be that in a short time they ruin the leather. Calf was the favourite leather of Henry, Prince of Wales, son of James I., and he had a large portion of the old Royal Library of England rebound in this leather.

RUSSIA is calf tanned in Russia and scented with an oil distilled from the pine-tree. It is not durable and lasts a little better if it is much used. Roger Payne, a great English binder of the eighteenth century, used Russia largely; it takes gold-tooling well. Russia and calf are now often used as doublure leather for richly-bound books, a use for which they are well fitted, as they take the necessary ornamentation well and there are no joints to get out of order.

ROAN is made mostly from Scotch sheep skin, but it also comes to us from India. Roan is generally tanned, dyed and finished in imitation of morocco, and the artificial grain is often so well made that it is extremely difficult to detect, especially when made up. Many of the dyes used in the cheaper kinds of roan are not at all satisfactory—they rot the leather—but the best kinds of roan are strong and valuable, and both wear and look well. "Basil" is a roan, usually red and "diced." "Skiver" is the grain side, a split roan, used as a leather, the flesh side being dressed differently and made into "chamois." Skiver is all show and has no strength in it to speak of. Roan dressed flesh side outwards is often used for ledgers, its appear-

ance in this form is like that of the calf similarly treated, but the texture is not so fine.

PIG SKIN is very strong. It was formerly largely used in Germany, and, as used there, is generally whitish in colour. It lasts excellently, and is known by the large hair marks which go through it. It is usually decorated in "blind" and rarely in gold.

Besides these leathers are the important materials VELLUM and PARCHMENT, said to have been first made at Pergamos, in Asia Minor. They are made from the skins of the goat, wolf, pig, or sheep; and the finest vellum is made from the skins of calves. The coarser varieties are naturally used for bookbinding, but old books are often bound in pieces of old MSS. or music written on vellum.

The preparation of vellum is by soaking the skin in lime, scraping it well on both sides, and rubbing it with chalk and pumice-stone, and in mediæval times it was of great value for writing upon. Pliny mentions that the *Iliad* of Homer was written upon a piece so fine that it would go into a nutshell. It is a most valuable material for bookbinding, is very strong, does not absorb dust, and will bear cleaning well. It is difficult to execute gold-tooling on vellum, but very effective when well done, and books bound in this material usually have lettering pieces of coloured leather, and generally also have "flat" backs, in contradistinction to backs in which the bands show in relief.

Stained and coloured vellum is often found on Dutch bindings, and has been rarely used in England—certainly to some extent in the seventeenth century, and an English binder, James Edwards, of Halifax, took out a patent in 1785 for a process he invented of rendering vellum transparent. Edwards, being also an excellent artist, painted designs on paper or some white substance, and closely covered them with his transparent vellum, by which means the painting is perfectly preserved so long as the vellum exists. Several instances of pierced vellum, showing coloured satin underneath, are known, but I believe this process has never found favour among English bookbinders.

Colours have been rarely used in any systematic way by book-collectors, but it is quite possible that more attention has been paid to this point than we are aware of. De Thou used, in a broad sense, certain colours for certain subjects—"Theology" in olive, "Classics" in red, and "Philosophy" in yellow, and the three book-loving daughters of Louis XV. of France had

their entire libraries bound in distinctive colours, but bearing the same heraldic ornamentation. Mdme. Adelaide used red, Mdme. Victoire olive, and Mdme. Sophie citron.

Mary, Queen of Scots, after the death of her first husband, had her books always bound in black leather, and all the books known to me that were bound in leather at Little Gidding were black, as also were the original bindings, as far as I know, of the *Εικων Βασιλικη*. The majority of the books bound by Samuel Mearne for Charles II., were as far as I know, in red morocco. At Windsor are several books bound for Hanoverian sovereigns in the livery colours of their line—red and blue.

To-day, at the British Museum, in cases where it is not necessary to follow some existing pattern, certain colours are used for certain subjects. Military books are put into red covers, Navy books into blue, works on botany in green, and so on.

Damp is the great enemy of leather bindings, and the strongest moroccos speedily powder away under its influence. Too much dryness is also bad, especially for calf. Bookbindings keep better if enclosed in cases, but it is very necessary to have proper ventilation, and to see that the cases are occasionally opened, and left open for some time.

CYRIL DAVENPORT.