

ON LOST ARTS

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IT would seem an incontrovertible statement that in this age, when science is applied to everything, we should know how to do everything. But do we? Are there no lost arts?

An example that of course occurs to everyone is the building of the pyramids by the ancient Egyptians. Our engineers could pile huge blocks of stone one upon another over a central chamber, but they would do it by steam-driven machinery. We who have made the useful barrages over the Nile could also rear the useless pyramids if we wished. The Egyptians may have employed slave labour and used levers, inclined planes and rollers; but the fact is that we do not know with certainty how they caused these gigantic blocks of granite to rise into the air of the desert.

Passing on to the Middle Ages, what shall we say of stained glass? We are making coloured glass for churches every day; but antiquarian experts tell us that the glass we make now lacks some quality or attribute which the old glass possessed. Hence it is, for instance, that the pre-Reformation sort is so highly prized by those who have specially studied this subject. We certainly know a great deal about pigments and a great deal about glass, but we have lost the art of combining these as they were combined in the stained glass of long ago so that it came to be a thing of beauty in the haunts of ancient peace.

In the making of varnish we have another instance of a lost art. This is proved by the following quotation from an article which appeared lately in *The Times*:—"Recently the rector of one of Wren's most famous churches was surprised to receive a visit from three varnish experts, two American and one English, who requested permission to examine the varnish in the church. They declared that the oak panels in the famous vestry of the church represented a lost secret in the making of varnish. The varnish employed in the seventeenth century served as a preservative of the wood, but was so transparent that it did not obscure the beauty of the grain. The ingredients which resulted in this quality are not known." Comment is unnecessary.

Road-making may be taken as our next example. No doubt at the present day our highways are constructed on the soundest

mechanical principles; but for hundreds of years the roads in Great Britain were nothing less than scandalous makeshifts. The art of road-making was well-known to the Romans. Roads from one end to the other of their vast empire were made in the first instance for military purposes, and were therefore made to last. They carried the heaviest traffic of their time, and they were properly drained. In making them the Romans first dug out the soil to a depth of several feet, and then laid down stones in layers, the largest below, the smallest on the top. The small surface stones were bound together by a top-dressing of soil. Where the road ran through camps or between buildings, the surface seems to have been formed of flat stones placed side by side after the manner of a pavement; the ruts formed by the chariot wheels in such roads can still be seen at Pompeii, and at one or two particularly well preserved camps in England.

After the Romans left Britain in the fifth century, no attempt seems to have been made to keep these highways in repair or to make new ones on Roman principles. Most of the roads in England were mere tracks over the natural surface of the ground, which became quagmires in wet weather and dusty hollows in dry. Where the traffic was concentrated on the main route leading into or out of a town, the road became worn into a deep depression naturally called "the hollow way". Hence the frequency with which we meet this as the name of a street in many places in England. Holloway Road in London is perhaps the best known of these, but many English towns also have their "Holloways", pointing back to the time when the traffic had worn the road into a deeper and deeper depression. These undrained, unmade roads of the England of the Middle Ages had no "bed" and no foundation; the art of road-making had been lost. The roads, in fact, were so bad that travelling was done almost entirely on horseback, and this undoubtedly delayed the development of wheeled traffic. When the stage-coach did come, it was constantly sticking in the mud, as was the huge carriage ("family" coach) in which the wealthy moved from one part of the country to the other; for the rest of the people scarcely travelled at all. This was the highwayman's opportunity; he appeared, pistol in hand, at the window of the embarrassed vehicle, and had things pretty much in his own way. Well on into the time of the Georges the roads of Great Britain were a disgrace to a civilized country.

From this slough of despond they were raised by the energy of a Scotsman, one John Loudon MacAdam, a native of "the auld toun o' Ayr." MacAdam, whose name of course survives in

“macadamised”, was born in Ayr in 1756, and died in 1836 in the little watering-place of Moffat amongst the Dumfriesshire hills. MacAdam reintroduced the Roman method of building up the road from a bed of stones of diminishing size. After making experiments on his estate in Scotland, he published in 1819 his *Practical Essay on the Scientific Repair and Preservation of Roads*. In 1827 MacAdam was appointed General Surveyor of Roads; and the rest of his life he spent almost entirely in England. He declined a knighthood.

The only roads of proper construction in Scotland prior to the macadamised roads were those made in the Highlands by General Wade after Culloden. They are the main roads over the Grampians to-day. Wade’s engineers did their work skilfully, building most substantial highways with not too steep gradients or dangerous curves. The admiration of someone who had more Hibernian wit than poetry in his constitution is embalmed in the well-known lines:

If you had seen these roads before they were made,
You would lift up your hands and bless General Wade.

Our next example of forgotten arts may be taken from the insanitary condition of the mediaeval cities of Europe. Imperial Rome brought pure water for drinking purposes from across the Campagna in a noble aqueduct; and she contrived the opposite of this in a system of sewers the best known of which is the *Cloaca Maxima*. We are so accustomed at the present moment to our cities having plentiful supplies of pure water and possessing excellent sewerage systems that we readily imagine it has always been so. But this is very far from being the case, for the mediaeval cities of Europe were very poorly supplied with drinking water, and had practically no sewerage at all: these were two lost arts.

As late as the time of Charles II, the streets of London were in a disgraceful condition; heaps of decomposing garbage polluted the air. The continual outbursts of pestilence were directly due to the insanitary state of these streets, which were never clear of decaying vegetable and animal matter. Old Edinburgh was, if possible, in a worse state. Here within the wall built after Flodden, the houses—unable to spread in any but the vertical direction—rose to the dizzy height of ten or twelve storeys. These towering and highly picturesque “lands” had no plumbing whatever. The drinking-water obtained from wells far down in the street below was carried in barrels on the backs of porters or “water-caddies”, as they were called, to the top of these immensely high houses. The slop water was disposed of by a “gravity system”

conspicuous in its simplicity, for it was merely thrown out of the window to the pavement below. Hence the ominous cry of "Gardey loo!" a Scottish corruption of *Gardez l'eau*, beware of the water. It might happen that the lady in her satins and laces, who had just alighted from her sedan chair and who had not looked above, might be splashed by the malodorous liquid; while we may be sure that it was the constant prayer of the bewigged male *not* to "let some drops descend on me". Smollett, who knew Edinburgh well, makes one of the characters in *Humphrey Clinker* explain the phrase "gardey loo" as meaning, "May the Lord have mercy on you". "Auld Reekie, I can smell ye noo," was the familiar exclamation of the traveller from the south on approaching the venerable city if the wind happened to be in the north.

Of baths in mediaeval Europe there were none; baths had vanished with the Roman Empire. One of the grievances the Christian Spaniards had against the Moors in Spain was that the Moors took baths. The baths of ancient Rome are amongst the most conspicuous of her ruins. Of course here and there in the Renaissance palaces of Italian princes bath-rooms might have been found; Titian decorated one in the Vatican. Except on the American continent, even at the present moment the bath has not been restored to its proper place in the house. Public baths have been instituted well within the memory of some of us; only the wealthy and leisured few take Turkish baths regularly even now. The spacious times of Queen Elizabeth were not spacious enough to include bathing.

Another lost art is that of heating economically the ordinary dwelling-house. Our methods are miserably inferior to those maxims employed by the Romans centuries before the birth of Christ. No doubt we *can* heat our large buildings, mansions, museums, and churches so as to make them more or less tolerable; but the ordinary house of the ordinary person is far more uncomfortable in an English winter than was a Roman villa here two thousand years ago.

The Romans heated their houses by heating first the floors and the walls; then all was well, calorifically speaking, with the house. We have substituted the open fire which, while it ventilates well, heats very badly. Besides, it is uneconomical and dirty. In the hypocausts of the one storeyed Roman buildings the hot air passed continuously under the floors, and in specially constructed flues through the walls. The same method of heating was used for the water of the baths, a bath being almost always found amongst the ruins of a Roman villa. If our feet are warm, we are warm

altogether; if cold, we are cold. The heating of floors, then, is almost a lost art. I say "almost", because it is a fact that a few large buildings in London have quite recently been heated by a system of hot-water pipes laid down in a double floor and in the walls and ceilings of the buildings. Before we leave the topic of Roman construction we might remind ourselves how some architects believe that the secret of the admitted excellence of Roman mortar is lost.

There is little doubt that one age forgets what an earlier age knew. Surgery under the Romans reached a degree of excellence which it was not again to attain until the time of Ambroise Paré, the Father of Surgery, who died in 1590. Paré by reintroducing the ligation of blood-vessels which had been in abeyance since the time of Celsus—the reign of Tiberius Caesar—made the technique of the amputation of limbs practically what it is to-day.

No fewer than two hundred kinds of surgical instrument were found at Pompeii—a far larger number than throughout the entire Middle Ages was considered necessary for a whole college of surgeons. Such operations as herniotomy, the Caesarian section, that for cataract, and those in plastic surgery were all quite familiar to the Romans in the first century of the Christian era.

The eminent medical historian, Dr. Fielding Garrison of New York, assures us that from the death of Soranus of Ephesus in the second century A. D. there were no real additions to obstetrics for 1500 years. Almost everyone who knows anything about medical lore knows that what Galen taught in the second century was the orthodox belief in the medical schools of Europe for 1400 years; but it is possibly not so well known that a great deal that Galen knew was completely forgotten by those same schools. Galen knew of more than one form of phthisis; he knew of its infectivity, and that a sea-voyage or residence in high and dry altitudes was very beneficial for it. Its infectious character has been virtually re-discovered in our own day. From the death of Galen to the time of Harvey there was practically no experimental physiology.

Let our last example be that of the Sun-Cure. Modern medicine is preaching the great value to health of plenty of sunlight. To the ancients this would have sounded the tritest of truisms. There have been sun-worshippers since the dawn of terrestrial intelligence. The Romans, though providing for shade in the courtyards of their dwellings, selected the sunniest spots, at least in Britain, for their villas. Great religious houses of the Middle Ages were built wherever possible on the open sunny sites

so much admired to this day. Think of the abbeys at Fountains and at Tintern. With the castles came in the reign of gloom.

The walled cities of Europe fostered the clustering of houses so close together that from a vast number of the narrow streets the sun was completely excluded. Then came even the worse slums of the towns of the so-called Industrial Revolution, the very high places of all that was contrary to health. To make matters worse, there was actually a tax on the area of glass in the windows of houses which, reducing windows to the smallest possible size, effectually produced the greatest unhappiness of the greatest number.

Our great-grandfathers never seemed to have realized that the sunlight which they took for granted was in itself a positive factor in the upbuilding and maintaining of a healthy body. And so we had sunless houses, sunless schools, sunless factories, sunless churches and sunless streets, and—tuberculosis, rickets and anaemia. Our forefathers, accepting the sun as a gift to the just and to the unjust, neglected to see that every one of these might really enjoy it. We are now proving tediously in the laboratory that in the free and universal sunshine we have one of the most valuable positive factors in the fostering of national health.