above, but are peculiar in having the joint-piece worked out of the same slab of marble as the adjacent tiles (see B in fig. 1), at a great additional cost of both material and labour, in order to secure a more perfect fit. Fig. 2

shows the way in which they were set on the roof. Great splendour of effect must have been gained by continuing the gleaming white of the columns and walls on to the roof. All along the eaves each end of a row of joint-tiles was usually covered by an *antefixa,* an oval-topped piece

of marble with honeysuckle or some other conventional pattern carved in relief.@@1 In most cases the Greeks used terra-cotta roofing tiles, shaped like the marble ones of fig. 1, A. Others were without a flange, being formed with a concave upper surface to prevent the rain getting under the joint-tiles. The lower edge of the tile, whether of marble or of clay, was usually half-lapped and fitted into a corresponding rebate in the upper edge of the next tile (see D in fig. 1). The ά*ρμοί* also were half-lapped at the joints (see E in fig. 1). All these were usually fastened with bronze nails to the rafters of the roof. In some cases each joint-tile had a projecting peg to fix it to the next *άρμός,* as shown at F. In the temples of imperial Rome marble roofing tiles were used like those shown at fig. 1. These were copied from the Greeks along with most other architectural features. For domestic and other less important work clay tiles *(tegulae)* were em­ployed, of the form shown in A, fig. 3. These are narrower

at the lower edge, so as to fit in to the upper edge of the next tile, and the joints were covered with a semicircular joint-tile *(imbrex).* Rows of terra-cotta antefixæ were set along the eaves of the roof, and were often moulded with very beautiful reliefs. In localities which supplied lami­nated stone, such as Gloucestershire and Hampshire in

Britain, the Romans often roofed their buildings with stone tiles, fastened with iron nails. Fig. 3, B, shows an example from a Roman villa at Fifehead Neville in Dorset, England. Each slab had a lap of about 2 inches over the row of tiles below it ; many large iron nails were found with these stone tiles. In a few cases, in the most magni­ficent temples of ancient Rome, as in those of Capitoline Jupiter and of Venus and Rome, and also the small circular temple of Vesta,@@2 tiles of thickly gilded bronze were used, which must have had the most magnificent effect. Those of the last-named building are specially mentioned by Pliny *(H.H.,* xxxiv. 7) as having been made of Syracusan bronze,@@3 —an alloy in great repute among the Romans. The bronze tiles from the temples of Jupiter Capitolinus and of Venus and Rome were taken by Pope Honorius I. (625-638) to cover the basilica of St Peter, whence they were stolen by the Saracens during their invasion of the Leonine city in 846.@@4

In mediæval times lead or copper @@5 in large sheets was used for the chief churches and palaces of Europe; but in more ordinary work clay tiles of very simple form were employed. One variety, still very common in Italy, is shown in C, fig. 3. In this form of so-called “pan-tile” each tile has a double curve, forming a tegula and imbrex both in one. Stone tiles were also very common through­out the Middle Ages. Another kind of roofing tile, largely used in pre-Norman times and for some centuries later for certain purposes, was made of thin pieces of split wood, generally oak ; these are called “ shingles.” They stand the weather fairly well, and many old examples still exist, especially on the wooden towers and spires of East Anglia. At the present day, when slate is not used, tiles of burnt clay are the ordinary roofing material, and many compli­cated forms have been invented to exclude rain. Most of these are, however, costly and do not answer better than a plain rectangular tile about 9 by 6 inches, fastened with two copper or even stout zinc nails, and well bedded on mortar mixed with hair. For additional security clay tiles are usually made with two small projections at the

@@@1 Marble tiles are said to have been first made by Byzes of Naxos about 620 B.c. ; see Pausanias, v. 10, 2.

@@@2 The dome of the Pantheon was covered with tiles or plates of bronze thickly gilt, as were also the roofs of the forum of Trajan.

@@@3 Bronze tiles for small buildings such as this were usually of a pointed oval form, something like the feathers of a bird. This kind of tiling is *called pavonaceum* by Pliny, *H.N.,* xxxvi. 22.

@@@4 Part of the bronze tiles had been stripped from the temple of Jupiter by the Vandals in 455 ; see Procopius, *Bell. Van.,* i. 5.

@@@5 The gilt domes of Moscow are examples of this use of copper.