action of fire well. On being treated with a dilute acid, limestones will effervesce and by this test they can easily be identified. Lime­stones weigh between 130 lb and 166 lb per cubic foot. They vary in colour, but most of them are cream or yellowish brown. *Marble* is a limestone which has been changed by the action of heat and pressure into a crystalline form. Many beautiful varieties are found which are suitable for interior decoration, such as for columns, wall lining, paving, &c., and in dry sunny climates they may be employed with great effect in external situations. They will take a high polish and the fine grained varieties are well adapted for intricate carving. The principal supplies of marble are drawn from Italy, Belgium and France, but the marbles from Ireland and those from Devon­shire and Derbyshire possess a remarkable range of colour and variety of markings. America has few notable coloured marbles; most of the stones quarried are white or black. The states of Vermont (West Rutland and Sutherland Falls quarries), Tennessee and Georgia produce large quantities of marble. *Marezzo* and *scagliola* are imitations of marbles, and their manufacture and use are described in Plasterwork.

*Sandstones* are composed of grains of sand held together by a cementing substance to form a compact rock. The cementing medium may be silica, alumina, carbonate of lime or an oxide of iron. Those stones that have a siliceous cement are the most durable. Sandstones vary more in colour than limestones, the colour being largely due to the presence of iron. Cream, brown, grey, pink, red, light and dark blue, and drab are common colours. Typical British sandstones are Corsehill (red) from Dumfriesshire, the Yorkshire sandstones (brown), Pennant stone and Forest of Dean (blue and grey) from Gloucestershire. In America sandstones are quarried in many states, principally Connecticut (brown stone), New York (Potsdam red stone), Ohio (Amherst Berea and other quarries, light brown or grey stone) and Massachusetts (Long­meadow brown stone). The texture of sandstones varies from a fine, almost microscopical, grain to one composed of large particles of sand. It will generally be found that the heaviest, densest, least porous and most lasting stones are those with a fine grain.

*Granites* are igneous rocks formed by volcanic action and are of all geological ages. Granite is composed of quartz, felspar and mica intimately compacted in varying proportions to form a hard granular stone. Quartz is the principal constituent and imparts to the rock the qualities of durability and strength. Stones containing a large proportion of quartz are hard and difficult to work. Felspar of an earthy nature is opaque in appearance and is liable to decay; it should be clear and almost transparent. The characteristic colour of the granite is generally due to this substance, but the stone is often affected by the nature of the mica it contains, whether it be light or dark in tint. Granite is the hardest, strongest and most durable of building-stones, and is difficult and costly to work. When polished, many varieties present a beautiful and lasting surface. By reason of its strength and toughness this stone is often used for foundations, bases, columns, kerbs and paving and in all positions where great strength is required. The granites from the Peterhead and Aberdeen districts of Scotland and from Cornwall and Devonshire in England are much used. In the United States good granites are quarried in Connecticut, Massachusetts and Minnesota. Canada, especially the eastern provinces, supplies many excellent varieties of granites. Much granite is also exported from Norway and Sweden. *Syenitic granite* contains hornblende in addition to quartz, felspar and mica. True *syenite* consists of quartz, felspar and hornblende, the latter taking the place of mica. It obtains its name from a stone found at Syene in Egypt, but it has since been discovered that this stone is not a “ syenite ” as it actually contains more mica than hornblende. These rocks are very hard and are used more for paving and road-metalling than for building purposes.

*Slates.*—The slate used for roofing and other purposes in building is a fine-grained and compact rock composed of sandy clay which has been more or less metamorphosed by the action of heat and tremendous pressure. Such rocks were originally deposited in the form of sediment by the sea or river, afterwards becoming compacted by the continual heaping up of superincumbent material. Owing no doubt to some sliding motion having at some time taken place, slaty rocks are capable of being split into thin sheets which are trimmed to the various marketable sizes. A good slate is hard, tough and non-absorbent, will give out a metallic ring if struck, and when trimmed it will not splinter nor will the edges become ragged. Slates range in colour from purple to grey and green. The best-known British slates are those of the Welsh and Westmor­land quarries. In America good slate is found in the states of New York, Pennsylvania and Maine. (See also Roofs.)

There are several kinds of artificial stone on the market, consisting of fine cement concrete placed to set in wooden or iron moulds.

Although from an artistic point of view its use is not desirable, it is prepared with such care that its cheap­ness, strength and uniform character have led to its wide employment. One of the best-known varieties is *Victoria stone* which is composed of finely crushed Mount Sorrel (Leicestershire) granite and Portland cement, carefully mixed by machinery in the proportions of three to one, and filled into moulds of the required shape. When the blocks are set hard the moulds are loosened and the blocks placed in a solution of silicate of soda for about two weeks for the purpose of indurating and hardening them. Many manufac­turers turn out a material that is practically non-porous and is able effectually to resist the corroding influence of sea air or the impure atmosphere of large towns.

See Rivington’s *Notes on Building Construction,* vol. iii. ; F. E. Kidder, *Building Construction and Superintendence,* vol. i. ; P. Merril, *Stones for Building and Decoration* (American) ; H. Blagrove, *Marble Decoration*;W. R. Johnson, *Report on Building Stone for Extension of United States Capitol·, Report of Committee upon the Decay of Stone at the Palace at Westminster.* (J. Bt.)

**STONE AGE,** the term employed by anthropologists to describe the earliest stage of human civilization when man had gained no knowledge of metals, and his weapons and utensils were formed of stone, horn or bone. The term has no chronological value, as the Stone Age was earlier in some parts of the world than in others, and even to-day races exist who are still in their Stone Age. This first period of human culture has been subdivided by Lord Avebury into *Palaeolithic* and *Neolithic,* words which have been generally accepted as expressing the two stages of the rough, unpolished and the finely finished and polished stone implements. (See Archaeology.)

**STONE-FLY,** the name given to medium-sized, neuropterous insects of the family Perlidae with long flexible antennae, wide thoracic sterna and with the wings resembling, as regards size, shape and the fan-like folding of the posterior pair, those typical of the Orthoptera except that the anterior pair is membranous and not coriaceous. The immature forms, which are aquatic, carnivorous and active, are very like the adults except in the absence of wings and in their method of respiration, which is either cutaneous or effected by means of variously placed integu- mental tufts richly supplied with tracheae. By some authors the Perlidae are regarded as a special order, Plecoptera; by others as a sub-order of an order Platyptera, which contains the Termitidae and some other insects as well.

**STONEHAM,** a township of Middlesex county, Massachusetts, U.S.A. Pop. (1890), 6155; (1900), 6197; (1910, U.S. census), 7090. Area, 6∙6 sq. m. In the township is Spot Pond, a large lake with islets, so named in 1632 by Governor John Winthrop and others who then first discovered it; it is a storage basin for the Metropolitan Water District, and supplies Medford, Melrose and Stoneham. A large part (730 acres) of the Middlesex Fells Reservation of the Metropolitan Park System is in Stoneham. The village of Stoneham, with the only post office in the town­ship, is about 9 m. north by east of Boston, and is served by the Boston & Maine railway and by inter-urban electric lines; it has a public library. Steam power was first used in the manufacture of shoes in Stoneham by John Hill & Co., who introduced many labour-saving devices, notably the heeling machine (1862). Stoneham, long a part of Charlestown and first settled about 1668, was incorporated as a township in 1725, but its boundaries have been frequently changed since then.

**STONEHAVEN** (locally *Stanehive)i* a police burgh, seaport and county town of Kincardineshire, Scotland, 15 m. S.S.W. of Aberdeen by rail. Pop. (1901), 4577. It consists of two quarters, the old town picturesquely situated on the south bank, of the Carron and the new on the land between this stream and the Cowie, the two being connected by the bridge which carries the main road from the south to Aberdeen. The principal buildings are the market-house and town hall, and the industries include distilling, brewing, tanning, the making of net, rope and twine and woollen manufactures. The harbour, a natural basin, is protected on the south-east by cliffs and has a quay. The trade is mostly in coal and lime and the exports are chiefly agricultural. The town is an important centre of the fishing industry, and has become a favourite watering-place. On the decay of Kincardine, the original capital, Stonehaven became the county town in 1600, and suffered heavily during the covenanting troubles, Montrose setting it on fire in 1645. The Slug Road to Banchory-Ternan, or Upper Banchory (pop. 1475), 15 m. distant, a favourite residential resort of Aberdeen citizens, begins at Stonehaven. It pursues mainly a north-western direction, at one point being carried over the shoulder of Cairn mon-earn (1245 ft.).