tality of the contained worm. The means used for this is heat, either natural or artificial ; sometimes simple exposure to the solar rays will effect this object; but in climates where these have not power, some artificial heat must be employed, such as the heat of steam or of an oven, but more generally that of the latter. In this case, the heat should not be greater than what is usual in the oven after the bread has been withdrawn. Long shallow baskets are taken and filled nearly to their tops with cocoons, and are covered over, first with paper, and then with a cloth. In these bas- kets, the cocoons are exposed to the heat of the oven for nearly an hour, and on being withdrawn, several cocoons are chosen from the part of the basket least exposed to the heat, and the chrysalides in them stripped and pricked with a needle. If upon being pricked, they give no sign of ani- mation, it may be fairly presumed that the destruction of the creatures has been accomplished. Before the silk of the cocoons can be reeled off, it is necessary to separate them from the floss in which they are enveloped ; this is effected by opening the floss covering at one end, and protruding the cocoon. It is of the greatest importance in the reeling process, that all the cocoons reeled together be of one class.

The apparatus for reeling is sketched in fig. 1, and to avoid confusion, the working parts only are shewn : *a a* is a bath or vessel of water, which, when of the best con- struction, is heated by steam. Into this the cocoons are put, that the gum which retains the thread in its place may be so much softened as to permit the thread to be unwound ; the bath is usually divided by three partitions into four divisions, each of which may contain about five coc∞ns ; *b bb* are wires with eyelets at their ends, through which the filaments from the cocoons are put. In their upward progress towards the reel, the groups of filaments are made to cross and recross each other, before their final combination at the last eyelet, and by the friction thus pro- duced, they are freed from adhering impurities ; *c* is the reel driven by a belt from the pulley *d,* which is itself driven by the prime mover, whatever that may be *∙,f* is a tumbler, whose end carries a pulley, which presses on the belt that drives the reel ; by lifting up the long end of the tumbler, the belt is slackened, and the reel stops. The filaments, when combined at the upper eyelet, pass along the guide *e e,* and through eyelets at its ends; this guide has a pin projecting from its under side, working in a spiral groove cut round the barrel *h ;* by this it receives a reciprocating mo­tion, and so spreads the filaments equally over the reel.

The filaments, in their passage from the bath to the reel, must necessarily traverse a considerable space, to allow their softened gum to be again hardened by the air, that they may not afterwards adhere together.

In the place where the reeling of silk is performed, many of these machines are arranged along the building, and driven by the moving power through a shaft extending the whole length, carrying on it pullies at the proper intervals. In working the apparatus, the reeler, who is generally a wo­man, sits at the bath, and having taken a number of cocoons, immerses them in the water. When their gum is sufficiently softened to permit the thread to come off, the reeler takes a whisk formed of fine twigs bound together, and cut off evenly at the ends at about six inches long, and with it she gently presses and stirs the cocoons, and en- tangles their loose threads on its points ; she then raises her whisk with the threads attached to it, disengages them from! it, and draws their ends through her fingers, to remove any adhering floss or impurity ; this cleaning process is called *battue.* Having thus freed the ends of such a number of the filaments as she means to use, she passes them through the various eyelets in the manner previously mentioned, and attaches them to the reel ; when this is accomplished, the reel is put in motion by dropping the end of the tumbler, and the filaments are drawn from the cocoons. It is the province of the reeler so to regulate the motion of the reel, and the heat of the water, that the silk may come off the cocoons regularly, not in lumps, which shows that the water is too hot ; nor in such a manner as that the cocoon shall be tossed out of the bath, which shows that the silk is yielded with difficulty, from the water being too cold sufficiently to soften the gum.

From the threads of the cocoons being finer near their termination than at their commencement, it becomes ne- cessary for the reeler to add other cocoons before the first set is quite exhausted ; and it is her care to do so in such a manner, as that the requisite thickness of the compound thread may be kept up throughout. It is generally con- sidered that the filaments **of** three fresh cocoons added to two half-wound ones, make a thread equal to that from four fresh cocoons.

The cocoons are not entirely wound off, but the husk, or *bairré,* in which the worm lies, is left, and used along with the floss silk, under the name of waste.

Every eleven or twelve pounds of cocoons generally yield one pound of reeled silk ; and as it takes from 240 to 250 cocoons to weigh one pound, the number of cocoons necessary to produce one pound of silk, may be reckoned to be 2817½ ; some cocoons may yield about 625 yards of silk, but the average is stated to be 300 yards, consequently the pound of silk filament, as produced by the worm, would, if stretched out, reach the amazing length of 480 miles.

When a sufficient quantity of silk is reeled off, it is doubled into a hank for use or sale ; and it is in this state that it generally comes to be operated upon by our manufacturers,—the hanks by the silk throwster, the waste by the silk spinner.

It is of the utmost importance in the succeeding manu- facture, that this reeling process should be well performed. Sometimes from the temperature of the water used to soften the gum being too high during the reeling, the parts of the hank of silk that lie on the spokes of the reel be- come very hard, and occasion the breaking of the thread in the after processes. Sometimes, too, when in the reel- ing process the threads happen to break, the ends are again only laid upon one another, and not connected by tying; the threads consequently come off the hanks in short lengths, and much trouble and loss of time is ex- perienced in searching for the other end ; and sometimes the reelers, either from inattention or design, reel off the whole of the thread of the cocoons, by which an exceedingly foul silk is produced. Not (infrequently, also, coarse and fine silks are reeled together in the same hank ; and, what is of common occurrence, the hanks when reeled are twisted up so tight, that the untwisting of them greatly damages the silk. But the greatest injury to the manu­facturer arises from dishonesty on the part of those who produce the reeled silk ; and this remark applies especially to the coarser descriptions of the *Brutia* silk. To get rid of their waste the producers of this silk roll up the refuse of the cocoon into what are here technically called *dollies,* and insert these into the hanks in such a manner, that they cannot be discerned by the purchaser ; they also have a method of mixing their waste with the good silk while it is being reeled, and as it cannot again be separated from it without great injury, this mode of vitiating the silk is more