

## Miscellaneous.

**HINTS FOR HARD TIMES.**—Credit never permits a man to know the real value of money, nor to have full control over his affairs. It presents all his expenses in the aggregate and not in detail. Every one has more or less of the miser's love of money—of the actual gold pieces and the crisp bank notes. Now, if you have these things in your pockets, you see them as you make your purchases, visibly diminishing under your eye. The lessening heap cries to you to stop. You would like to buy this, that, and the other; but you know exactly how much money you have left, and if you go on buying more things your purse will soon be empty. You do not see this when you take credit. You give your orders freely, without thought or calculation; and when the day of payment comes, you find that you have overrun the constable. On every hand we see people living on credit, putting off pay-day to the last, making in the end some desperate effort, either by begging or borrowing, to scrape the money together, and then struggle on again, with the canker of care eating at their heart to the inevitable goal of bankruptcy. If people would only make a push at the beginning, instead of the end, they would save themselves all this misery. The great secret of being solvent, and well to do and comfortable, is to get ahead of your expenses. Eat and drink this month what you earned last month—not what you are going to earn next month. There are, no doubt, many persons so unfortunately situated that they can never accomplish this. No man can guard against ill-health; no man can insure himself a well-conducted, helpful family, or a permanent income. There will always be people who cannot help their misfortunes. But, as a rule, these unfortunates are far less trouble to society than those in a better position, who bring their misfortunes upon themselves by deliberate recklessness and extravagance. You may help a poor, honest, struggling man to some purpose. But the utmost you can do for an unthrift is thrown away. You give him money you have earned by hard labor—he spends it in pleasure which you have never permitted yourself to enjoy. The best pleasures—those which sweeten life most, and leave no bitterness behind—are cheap pleasures. What greater pleasure can man enjoy than the sense of being free and independent? The man with his fine house, his glittering carriage, and his rich banquets, for which he is in debt, is a slave, a prisoner, forever dragging his chains behind him through all the grandeur of the false world through which he moves.—[All the Year Round.]

**EARLY PRINTERS.**—The first printers were Titans, and they performed a Titanic work. They were no mere skillful mechanics or plodding artisans. They were what the exigencies of their task required them to be—scholars, patriots, philanthropists; among the first of their age. They were men of large intelligence, with a right conception of the new power which printing had introduced into the world, and a clear consciousness that they were laboring for the illumination and improvement of the species. And they caught the inspiration of their lofty mission. They addressed themselves to their work with the hearts of heroes, and in the spirit of martyrs. The difficulties were enormous.

The early printer had often himself to prepare the work he was to print, either by translation or by original authorship. He had to make his own printing-press, he cast his own types, and manufactured his own ink. He was compositor and pressman, and corrector of the press. He had to bind his own book. He was his own editor, publisher and bookseller. The outlay of money was necessarily great. Some embarked a small fortune in the enterprise and were ruined. One, after laying out a large sum on apparatus and materials, and spending years at his task, died, broken-hearted, probably, before he had finished the printing of the book, when his materials and his unfinished work were sold for a trifle.

Two German printers, who carried their presses to Rome, complain, in a supplication to the Pope, that at vast cost and labor they had printed twelve thousand volumes, but for want of buyers they were no longer able to bear the expense of housekeeping; their dwelling was full of quires of printed books, but destitute of every necessary and comfort. Others encountered the active opposition of malignant despots, and suffered death for their heroic efforts in the cause of human enlighten-

ment. It was by such struggles, sacrifices and sufferings that the press conquered for itself, and so for knowledge and for truth, a world-wide empire. These early printers were a noble race, and deserve to be held in veneration as among the first benefactors of mankind.—[The Printer.]

**HOW TO FALL ASLEEP.**—The great point to be gained in order to secure sleep, is to escape from thought, especially from clinging, tenacious, imperious thought, which in most cases of wakefulness has possession of the mind. I always effect this by the following simple process: I turn my eyeballs as far to the right or left, or upward or downward, as I can without pain, and then commence rolling them slowly, with that divergence from a direct line of vision, around in their sockets, and continue doing thus until I fall asleep, which occurs generally within three minutes—always within five at the most. The immediate effect of this procedure differs from that of any other that I have ever heard to procure sleep. It not merely diverts thought into a new channel, but actually suspends it. Since I became aware of this I have endeavored, innumerable times, while thus rolling my eyes, to think upon a particular subject, and even upon that which before kept me awake, but I could not. As long as they were moving around, my mind was blank. If any one doubts this, let him try the experiment for himself. I wish he would; let him pause just here and make it. I venture to assure him that, if he makes it in good faith, in the manner described, the promise of a "penny for his thought," or for each of them, while the operation is in progress, will add very little to his wealth. Such being its effect, we cannot wonder that it should bring sleep to a nervous and wakeful man at night. The philosophy of the matter is very simple. A suspension of thought is to the mind what a suspension of travel or labor is to a weary body. It enjoys the luxury of rest; the strain upon its faculties is removed; it falls asleep as naturally as the farmer in his chair after toiling all day in his fields.—[Ex.]

**THE ANTIQUITY OF THE HOTTENTOTS.**—A remarkable ethnological problem is represented by the appearance of a race in the southern province of Africa, entirely different from the Southern African family, both in physique and in language—a race of copper color and low development amid dark races of noble physical structure, and separated from them both by mental peculiarities, and by a language presenting features exhibited in no other tongue. The people—the Hottentots—are supposed to be the oldest people on the South African continent, and among the evidences of this is the fact that the rivers, even in the Bechuana Territory, bear Hottentot names. Though found principally on the Southern point of the promontory of Africa, various fragments of their tribes are met with far in the interior, even north of Lake Ngami, as if the race had been gradually pressed down from the north by more powerful tribes. It is an instance of the vitality of race that the Bakaladari, the poorest of the Bechuana tribes, living side by side with the bushmen, the most degraded of the Hottentots, under precisely the same circumstances, are as different from them as they ever were; the former gladly raising, whenever possible, a few pumpkins, or keeping a few goats, and the latter scorning any culture of the ground or care of cattle, and preferring the wild life and the poor game or vermin which the desert furnishes. The Hottentot people have been gradually disappearing before the attacks of civilization. In the beginning of the last century a number of tribes were settled on the south-east coast, between the Cape and the river Kat. Some of these have been entirely exterminated; others have become scattered servants of the colonists, or have entered the Hottentot regiment in the colonial army; while a considerable body of emigrants have settled themselves on the Winter mountain, near the Kat river. The whole number is not thought to exceed 20,000.—[The Races of the Old World, by G. L. Bruce.]

**GUNS AND SHIP ARMOR.**—The Naval Ordnance Bureau claims to have settled a question which has excited a great deal of discussion in England and France—whether ships can be plated so as to resist the heaviest artillery. The annual report, which has just been sent to Congress, says the power of the guns belonging to the navy, and in common use in the batteries of our ships, have been tested against both solid and built-up places, and the conclusion reached is wholly in favor of the guns and their

solid projectiles—the spherical shot for smooth-bores, being, however, immeasurably superior to the elongated rifle shot in every form. That is to say, no manner or thickness of iron or steel armor that could be carried on the hulls of sea-going ships will resist the impact of solid spherical shot fired from the heaviest calibre of the navy, at close range, with appropriate charges of cannon powder. This result has been reached by the fabrication of simple globes of iron, solid throughout, a thing heretofore considered impossible with large spherical shot. It is now known, beyond question, that it is easy to cast a 15-inch or 20-inch shot which will be perfectly sound and solid from circumference to center of figure, and one of the former has resisted, without breaking, 222 continuous blows of an 8-ton steam hammer. This being decided, the solution of the remaining elements of the problem of guns against armor is of easy process; for, thanks to the skill of our artisans, the cannon required to hurl these compact masses of iron, with the high velocities due to heavy charges of powder, are readily obtained.

**MARRIAGE CUSTOMS IN DAHOMEY.**—The Dahoman marriage is somewhat complicated. The aspirant sends to his intended father-in-law's house a man and a woman with two double flasks of rum. These Mercuries open the affair, after many preliminaries, by saying, "Our uncle wishes to wed one of your girls." The parent inquires and learns the suitor's name, after which the proxies retire. If Asa returns a favorable reply, the family is informed of the coming event, and the empty flasks are sent back, to signify consent and grant of alliance. This honor is acknowledged by two other and full flasks; and at the same time two heads of cowries and two cottons for his fiancée being forwarded by Coelebs. He then collects as much cloth as he can, and this task may occupy three years, during which he is expected to perform all customs which the girl may have omitted, such as sacrifice for her mother and other relatives. On the "happy day"—which is always Sunday—three messengers with flasks of rum are sent by the bridegroom at morning, noon, and sunset, to beg their daughter from her parents. A large cortege brings the bride to her future home. The father and mother are seated upon chairs, and then ensues a general feast and carouse, as many goats and pigs as possible being cooked; the banquet begins with rum and water and ends with rum.—[Burton's mission to the King of Dahomey.]

Electric clocks have become very general in France within the last few years, several of the chief lines of railway, as well as a number of public buildings in Paris being "timed" in this manner. It is now proposed to erect small clock towers, simple columns, with dials on all sides, in the main thoroughfares of Paris. The hands of the whole of the dials will be put in movement by an electric current from the observatory.

The recent snow storms in Idaho Territory have been so severe, that the roofs of several dwelling houses in Placerville, Idaho City, and other places, fell in from the weight of the snow.

The new Atlantic cable, now nearly completed, is a wonder of mechanical skill. There are seven copper wires, each 2,200 miles long, for a conductor; these are coated with eight of an insulating material, and this core then covered with jute yarn wound round it from ten strands. Then comes the outer coating, formed of the ten covered iron wires. The iron wire itself is 23,000 miles in length, and each wire is covered separately with five strands of tarred hemp, 135,000 miles of the latter being required, making together an aggregate length of material employed of 215,500 miles or nearly as much as would put ten girdles round the earth, or form a line that would stretch almost from the earth to the moon.

[From the Manchester Guardian, Dec. 10.]  
**THE CLIFTON (ENG.) SUSPENSION BRIDGE.**

The magnificent suspension bridge across the Avon at Clifton, by which the counties of Gloucester and Somersetshire are joined, was opened on Thursday last with great ceremony.

More than one hundred years ago, Mr. Alderman Vick bequeathed (in trust) to the Merchant Venturers £1,000, to accumulate at interest, for the purpose of building a bridge over the Avon at Clifton. The bequest having in 1830 swollen to £8,000, it was determined to take steps to commence the

construction of the bridge. Eight thousand pounds was, of course, inadequate for the construction of a bridge, and it was, therefore, necessary to provide for the remainder by means of toll on those passing over it. The worthy Alderman in making his bequest, however, contemplated a free bridge, and one of stone. Experience having shown that an iron suspension bridge would be preferable in such a locality, application was made to Parliament, and the necessary powers obtained in May, 1830, to build a toll iron bridge.

Numerous designs were supplied for the bridge, and that of Brunel was accepted, his object being to make the cliffs carry the bridge, and he estimated the cost of his scheme at £57,000. In 1831 the undertaking was commenced by the excavation of the first stone; then came the Bristol riots, which impeded this as every other undertaking in and about Bristol. In 1833, another and also unsuccessful effort was made to proceed; and in 1836 the meeting of the British Association was held at Bristol, and the President, the Marquis of Northampton, laid the foundation of the Somersetshire or south pier, a week previously an iron rod, on which a cradle was drawn to and fro, having been erected. The contractors then carried on the work for a time with spirit, but circumstances rendered it necessary for the trustees in 1837 to take it in their own hands, and in 1840 the Somerset pier was completed.

In 1843 want of funds put a stop to the work, it being found that \$30,000 would be required to complete it. In 1858, the limit fixed by the act of Parliament for its completion, the works were abandoned, and the prospect of the construction of the bridge seemed as far off as ever. In 1860, Mr. J. Hawkins, and Mr. W. H. Barlow expressed an opinion, that as Hungerford bridge was about to be pulled down, its materials might be used in the construction of Clifton bridge. The opportunity seemed so favorable that a new company was organized, with a capital of £35,000. The chains and materials of Hungerford bridge, apart from the pier, were purchased for £5,000. In 1861 the new company obtained its act and took the piers and land. One of the arrangements of the company is to (in the course of time) render the bridge free.

The bridge is suspended from the three high chains on each side passing over the piers, the ends being anchored in a chamber seventy feet below the level of the bridge in the solid rock. From the anchorage to the pier on the Clifton side the distance is two hundred and twenty feet, across the chasm seven hundred and three feet, and from the pier on the Leigh side the chains correspond with those on the Clifton side. The weight of iron used in the bridge is no less than one thousand five hundred tons, the chains alone weighing one thousand one hundred tons, and the perpendicular suspension rods twenty tons. The links to the chain are seven inches broad and twenty-four feet long, and each link is composed of a series of bars, bolted together at the ends. Four hundred bolts, of nearly two inches in diameter, are used for this purpose, having screw ends, by which they are fixed with a large iron nut. The bridge is painted a kind of dark red, now becoming very generally used for such works, and the best possible taste has been shown in not decorating it, the nuts and ends of the bolts connecting the links of the chain are alone gilt, and form a uniform and neat relief to the whole structure. From the chain, the bridge is suspended by one hundred and sixty-two wrought-iron rods, varying in length from sixty-five feet to three feet, and, being only one inch and a half in diameter, give the structure a very light and pretty character. There are two hundred tons of chains, and three hundred tons of girders employed above the quantity used for Hungerford bridge. The roadway of the bridge is formed of sleepers of Baltic timber, with transverse planks laid upon them.

There can be no doubt of the stability of the bridge, Mr. Alrey having carried over it, by means of a tramway, five hundred tons of stone.

—Speaking of cotton, the London *Shipping Gazette* says England this year has received from all sources about 600,000 bales more cotton than in 1863. The consumption has increased about 270,000 bales and there is a total stock on hand equal to 582,000 bales.

—The man who didn't think it respectable to bring up his children to work, has just heard from his three sons. One of them was a driver on a canal, another had been up as a vagrant, and the third has gone to the penitentiary to learn the shoe business.