

himself to watch the whole course of proceedings in school, he soon perceived that the teacher had a habit, and had acquired a singular dexterity in it, of knocking down and killing flies with his cane, to the end of which he had fastened a piece of leather. The windows were all on one side, and being exposed to the morning sun of summer, they were continually full of flies. The teacher's path lay along them, in front of his scholars; and while talking to the latter, he struck down the flies as they showed themselves at the window. This manœuvre amused the children infinitely more than his instruction did, and they followed his example. They were incessantly on the watch for flies that buzzed through the room, caught them in their hands, and showed as great dexterity and in this kind of chase as their teacher in his. But their amusement did not end here: they had learned to play with their captives, treat them with detestable cruelty, and seemed to find a wicked delight in observing the shivering of their victims.

On observing these curious and far from pleasing peculiarities of the school, the intelligent and humane clergyman easily accounted for the spirit of destructiveness among the children; and his first step was to induce the teacher to take his leather from the end of the cane; and, to turn the desks so that the boys sat with their backs to the windows, and the teachers path lay on the other side of the room. Then the minister went frequently into the school, and examined so severely, that both teacher and pupils had more to do than to give their attention to the flies. As this was not yet entirely satisfactory in its results, the minister took advantage of the hot summer weather, to have instruction given only in the afternoon, when the school was not so full of flies, and thus he gradually banished the insects from the thoughts of teacher and children. But he knew that it was of little avail solely to pull the weeds out of the young mind. He obtained an unoccupied piece of land fit for planting, and, not far from the school, laid out a school garden. This pleased the teacher, and the children willingly took part in the task, for they had soon learned to like their new minister, who came and worked amongst them. The garden was surrounded by a hedge planted with trees and shrubs, and each child had a tree or shrub given him to take care of. A nursery was soon laid out, and provisions made for plenty of larger gardens and orchards in the village. And, behold! the spirit of destructiveness among the children soon passed away; and every man's fruit and garden became safe, the youths even begging of their parents that trees might be planted in the field for them to take care of. The new spirit was communicated from children to parents, till it spread throughout the entire village; every family had its pretty little garden; an emulation in cultivating flowers sprang into existence; idle and bad habits disappeared; and gradually the whole place was a scene of moral as well as of physical beauty.

This incident, the truth of which can be vouched for, has been communicated to us by a lady of rank, who happens to have lately become acquainted with the circumstances, and has thought that their publicity may be advantageous. We have no doubt of the fact, that the practice of amateur gardening is never associated with evil, but is always a token of advanced tastes and correct habits. Let every one, therefore, within his sphere, do what he can to promote this most desirable pursuit. We would further say, let every school, so far as it can conveniently be done, have its garden, not only for purposes of amusement, but as an important engine of education.

From the Philadelphia Ledger.

DISCOVERIES

DURING THE LAST HALF CENTURY.

THERE has been no period since the commencement of the world in which so many important discoveries tending to the benefit of mankind were made, as in the last half century. Some of the most wonderful results of human intellect have been witnessed in the last fifty years. Some of the grandest conceptions of genius have been perfected. It is remarkable how the mind of the world has run into scientific investigation, and what achievements it has effected in that short period. Before the year 1800 there was not a single steamboat in existence, and the application of steam to machinery was unknown. Fulton launched the first steamboat in 1807. Now there are three thousand steamboats traversing the waters of America, and the time saved is equal to seventy per cent. The rivers of every country in the world nearly are traversed by steamboats. In 1800 there was not a single railroad in the world. In the United States alone there is now 8,797 miles of railroad, costing \$286,000,000 to build, and about 22,000 miles in England and America. The Locomotive will now travel in as many hours a distance which in 1800 it took as many days to accomplish. In 1800 it took weeks to convey intelligence between Philadelphia and New Orleans. Now it can be accomplished in minutes, through the electric telegraph, which had only its beginning in 1846. Voltaism was discovered in March 1800; the electro-magnet in 1821. Electrophony was only discovered a few years ago. Hoe's printing press, capable of printing 10,000 copies an hour, is a very recent discovery, but of the most important character. Gas-light was unknown in 1800; now every city and town of any pretence is lighted with it, and we have announcement of a still greater discovery, by which light, heat, and motive power may be all produced from water, with scarcely any cost. Deguerre communicated to the world his beautiful in-

vention in 1839. Gun-cotton and chloroform are discoveries but a few years old. Astronomy has added a number of planets in the solar system. Agricultural chemistry has enlarged the domain of knowledge in that important branch of scientific research, and mechanics have increased the facilities of production, and the means of accomplishing an amount of labour which far transcends the ability of united manual effort to accomplish. The triumph achieved in this last branch of discovery and invention are enough to mark the last half century as that which has most contributed to augment personal comforts, enlarged the enjoyments, and added to the blessing of man. What will the next half century accomplish? We may look for still greater discoveries, for the intellect of man is awake, exploring every mine of knowledge, and searching for useful information in every department of art and industry.

THE BIBLE.

A nation must be truly blessed, if it were governed by no other laws, than those of this blessed Book; it is so complete a System, that nothing can be added to it or taken from it; it contains every needful to be known or done; it affords a copy for a King, and a rule for a Subject; it gives instruction and a counsel to a Senate; authority and direction for a Magistrate; it cautions a Witness; requires an impartial verdict of a Jury, and furnishes the Judge with his Sentence: It sets the Husband as Lord of the Household, and the Wife as mistress of the table, tells him how to rule, and her how to manage: It entails honor to Parents and enjoins obedience to Children: It prescribes and limits the sway of the Sovereign, the rule of the Ruler, and authority of the Master; commands the subjects to honor, and the Servants to obey; and promises the blessing and protection of its Author, to all that walk by its Rules: It gives directions for weddings and for burials: It promises food and raiment, and limits the use of both: It points out a faithful and an eternal Guardian to the departing Husband and Father; tells him with whom to leave his fatherless Children, and in whom his Widow is to trust, and promises a Father to the former, and a Husband to the latter: It teaches a man how to set his house in order, and how to make his will: It appoints a dowry for his wife, and entails the right of the First-born; and shews how the younger branches shall be left: It defends the rights of all; and reveals vengeance to every Defrauder, Over-teacher, and Oppressor. It is the first Book; the best Book; and the oldest Book in the World; it contains the choicest matter; gives the best instruction; and affords the greatest pleasure and satisfaction that ever was revealed: It contains the best of laws, and profoundest mysteries that ever was penned: It brings the best of tidings, and affords the best of comfort, to the enquiring and disconsolate: It exhibits Life and Immortality from Everlasting, and shews the way to Glory: It is a brief recital of all that is past, and a certain prediction of all that is to come: It settles all matters in debate, resolves all doubts and eases the Mind and Conscience of all their scruples: It reveals the only living and true God, and shows the way to him; and sets aside all other Gods, and describes the vanity of them, and of all that trust in them: In short it is a Book of Laws to shew right and wrong, a Book of Wisdom that condemns all folly, and makes the foolish wise; a Book of Truth, that detects all lies, and confutes all errors; and a Book of Life that lights the way from everlasting death. It is the most compendous Book in all the world, the most authentic, and the most entertaining history that ever was published.

It contains the most ancient antiquities, strange events, wonderful occurrences, heroic deeds, unparalleled wars: It describes the celestial, terrestrial, and infernal worlds, and the origin of the angelic myriads, human tribes and devilish legions. It will instruct the most accomplished mechanic, and the profoundest artist: It will teach the best rhetoric, and exercise every power of the most skilful arithmetician; puzzle the wisest anatomist, and exercise the nicest critics: It corrects the vain philosopher, and confutes the wise astronomer: It exposes the subtle sophist, and makes diviners mad: It is a complete Code of Laws, a perfect body of Divinity, an unequalled narrative, a Book of Lives, a Book of Travels, and a Book of Voyages: It is the best Covenant that ever was agreed on, the best Deed that ever was sealed, the best Evidence that ever was produced; the best Will that ever was made, and the best Testament that ever was signed. To understand it, is to be wise indeed; to be ignorant of it, is to be destitute of wisdom. It is the King's best copy, the magistrate's best rule, the housewife's best guide; the servant's best Directory, and the Young Man's best Companion. It is the school-boy's spelling-book, and the learned man's master-piece: It contains a choice grammar for a novice, and a profound mystery for a sage: It is both the ignorant and the wise man's Dictionary. It affords knowledge of watty inventions for the humorous, and dark sayings for the grave; and it is its own interpreter: It encourages the wise, the warrior, the swift, and the overcomer; and promises an Eternal Reward to the excellent, the conqueror, the winner, the prevalent. And that which crowns all, is, that the Author is without partiality, and without hypocrisy. In whom is no variableness or shadow of turning.

True economy is something better than stinginess.

From the London Working Man's Friend.

DO GOOD.

Good men are pillars of the earth—the valiant and the strong,
Who battle with the deeds of sin, of darkness and of wrong—
Whose helmet is the love of truth—their armour, hate of crime;
Then, brother, make their warfare yours, and untold bliss is thine.

Do good: The grains of mustard-seed thou scatterest in the earth
Shall to a thousand priceless gems give unreluctant birth;
Like springs upon a barren land, like sunshine to the cloud,
Thy deeds shall come; and earth shall tune thy praises long and loud.

Do good: To banish Envy's reign, and Hatred's threefold power,
And foul Corruption's withering blast—the blight of every hour;
Stem grosser thought and wanton pride—outstretch thy willing hand
To plant Religion's purity in this, God's pleasant land.

Do good: Grim Malice to subdue, and Lust with bloated eyes,
Though hard the road and sharp the thorns that in thy pathway rise;
Though shadowy glooms come round thy way, let not thy heart despair;
Heaven's light, a lantern to thy feet, shall guide thy footsteps there.

Do good: To stay the raging sea of Crime, whose stormy wave
Round youth's frail barque tempestuous rolls—stretch out thine arm to save
The weak, the helpless, and forlorn from Sin's engulfing tide,
And more than conqueror thou shalt be through all the world beside.

Do good: And let thy kind words lull the weary heart to sleep,
And dry the fountains of those eyes which sorrow maketh weep,
Love's gentle words be thine to turn the hard rebellious will,
And sceptic hearts shall yield—confess that God is with us still.

Do good: A world of human joy shall flood thy spirit o'er,
And those unfeignedly rejoice bow'd down with grief before.
Do good—and airs from Eden land shall their sweet voices bring
To bless the in thy pilgrimage and guide thy wandering.

New Works.

MISERIES OF CONSTANTINOPLE.

It took a longer time before I could accustom myself to the multitude of ownerless dogs which the stranger encounters at all corners, in every square and in every street. They are of a peculiarly hideous breed closely resembling the jackal. During the day time they are not obnoxious, being generally contented enough if they are allowed to sleep undisturbed in the sun, and to devour their prey in peace. But at night they are not so quiet. They bark and howl incessantly at each other, as well as at the passers by, but do not venture an attack, particularly if you are accompanied by a servant carrying a lantern and a stick. Among themselves they frequently have quarrels and fights, in which they sometimes lose their lives. They are extremely jealous if a strange dog approach their territory, namely, the street or square in which they have possession. On such an intruder they will fall tooth and nail, and worry him until he either seeks safety in flight or remains dead on the spot. It is therefore a rare circumstance for any person to have a house dog with him in the streets. It would be necessary to carry the creature continually, and even then a number of these unbidden guests would follow, barking and howling incessantly. Neither distemper nor madness is to be feared from these dogs, though no one cares for their wants. They live on carrion and offal, which is to be found in abundance in every street, as every description of filth is thrown out of the houses into the road. A few years ago it was considered expedient to banish these dogs from Constantinople. They were transported to two uninhabited islands in the sea of Marmora, the males to one and the females to another. But dirt and filth increased in the city to such a degree that people were glad to have them back again.

The town is not lighted. Every person who goes abroad at night must take a lantern with him. If he is caught wandering without a lantern by the guard, he is taken off without mercy to the nearest watch-house where he must pass the night. The gates of the city are shut after sunset.

In proportion as I was charmed with the beautiful situation of Constantinople, so was I disgusted with the dirt and the offensive atmosphere which prevail everywhere; the ugly narrow streets, the continual necessity to climb up and down steep pieces in the badly paved roads, soon render the stranger weary of a residence in this city.

Worse than all this the continual dread of conflagration in which we live. Large chests and baskets are kept in readiness in every house; if a fire breaks out in the neighborhood, all valuable articles are rapidly thrown

into these and conveyed away. It is customary to make a kind of contract with two or three Turks, who are pledged, in consideration of a trifling monthly stipend, to appear in the hour of danger, for the purpose of carrying the boxes and lending a helping hand wherever they can. It is safer by far to reckon on the honesty of the Turks than on that of the Christians and Greeks.—*Visit to the Holy Land, by Madame Pfeiffer.*

THE SAW FLY.

It would be difficult to point out, in the whole range of animal mechanics, an apparatus of more exquisite construction than the saw with which these little insects are furnished. Nothing certainly ever manufactured by human ingenuity is at all comparable to this beautiful mechanism. The cutting edge of each saw is armed with nineteen or twenty teeth; these are very small, and appear at first to be of simple structure, even when considerably magnified; but when examined with very powerful glasses it is found, to the surprise of the observer, that every one of these teeth is itself a saw, armed with eighteen or twenty other teeth of extreme delicacy. Every species, moreover, would seem to have the teeth of its saw constructed upon a principle peculiar to itself but in all they are equally admirable. Thus, in another form examined by Lyoneet, the saw was armed with sixteen teeth resembling flat cutting plates; when further magnified, each of these teeth was found to be of itself minutely serrated, forming a cutting apparatus exactly comparable to an instrument used in surgery called after the name of its inventor, Hay's saw. Besides the teeth above described, which give a cutting edge to these exquisitely constructed organs, the whole flat side of the saw is covered with multitudes of sharp points, so small as scarcely to be seen by the aid of the best glasses, but which constitute an extremely delicate file, wherewith the incision made by the saws can be subsequently enlarged to any required extent.—*Jones's Natural History of Animals.*

THE TOP OF THE DOME OF ST PETER'S AT ROME.

We enjoyed it in perfect security, the top of the dome being surrounded by a railing which is surrounded by a railing which is not discernible from below. We were at the base of the ball which surmounts the dome, and forms its upper ornament, and certainly had no wish to emulate the adventurous French lady, recorded by Eustace, who climbed to the top. But unfortunately for our peace, we had in our party a naval officer, who clambered up the aerial-looking ladder that is fixed round it, with as much ease as he would have run up the sarouls of a man-of-war, and, not satisfied with this exploit, contrived, by some extraordinary process, to hoist himself up the smooth polished sides of the metallic cross, and actually seated himself on its horizontal bar! For his safety we entertained no fears. He had been rocked on the giddy mast and cradled in the storm; but we trembled to see his example followed by almost all the gentlemen who were with us; not that there was anything whatever to be gained or seen by it, but that they would not on any account be outdone; and then there was the future dear delight of boasting that they had stood on the top of the ball of St. Peter's—cheaply purchased at the risk of breaking their necks.—We were therefore doomed to see these silly men, one after another, go up this terrible place climbing about half of the way round the lower convexity of the ball, in a posture nearly horizontal, with their heads downwards, much as a fly creeps along the ceiling. We observed the secret fear and agitation painted on their countenances, and knew that a moment's giddiness, a single false step, must precipitate them down a height that was agony to think of, but we durst not speak. More lucky than wise, however, they all descended in safety; and we resolving to do something in our turn, went up into the inside of the ball—an enterprise by no means difficult or dangerous, but somewhat tedious, one person only being able to ascend at once; and as our party was rather numerous, by the time the last had got up, the first was nearly baked to death, for this great brazen globe was heated, by the powerful rays of an Italian sun to the temperature of an oven.

In this delightful situation, we began 'God save the King' in full chorus; but long before it was concluded the loyalty of most of us had melted away, and we were almost tumbling over each other's heads down the narrow ladder, and far more eager to get out than we had been to get in. Although the ball looks from below no larger than an apple, it can contain in the inside about 18 people, and we calculated that even more might be packed in it, if they did not suffocate.—*Rome in the Nineteenth Century: Bohn's Illustrated Library.*

THE CALORIC-ENGINE.

The caloric-engine of any given power will consume not an eighth of the coal used by a steam-engine of like power. The caloric-engine has no boilers, and is, in construction, more compact and less complicated than the steam-engine; consequently, it will be proportionally cheaper. As sure as water will find its level, the use of the caloric-engine will force its way. We have expended, and are expending at this moment, immense sums of the public money to fit our largest line of battle ships, as well as frigates, with the screw propelled by steam. This involves not merely the expense, great as it is, of the exterior