Henry Ward Beecher on the Railway Strike.

There is no class of men who deserve the gratitude of the community more than those who operate our great railroads. I shall not satisfy myself if I do not express the gratitude which I feel, and which I think every man should feel, for that most honorable class of laboring men in our midst. Considering the vast extent of these roads; considering how they have changed the forms even of industry and civilization; considering how the industrial interests and the very happiness of sociсty are dependent on them; considering what an instrumentality the railroad system has become in the civilization of our land and in our time—considering these things, the men who conduct this system and make it successful are certainly worthy of consideration. Civilization would be obstructed and in many respects destroyed but for these workers upon this multiplex and universal machine. The faithful men who operate it are responsible for an incalculable trust; and in general they execute that trust so as to demand recognition and gratitude on every hand. In all weather, by night and by day, they toil, carrying their lives in their hands. No man more than the engineer sows without reaping. No man carries such responsibility with so little remuneration. Millions of men by his care and fidelity are sped upon their errands safe from disaster who give him never a second thought.

The general sobriety of all the operatives on our great roads, and their usual carefulness, are unquestionable. Myriads of men daily are indebted to them. Their heroism often breaks forth in most illustrious acts. It is seldom that in any great catastrophe we do not hear of some among the engineers and their faithful assistants who heroically risk their lives. The stationary men who care for the depot, the switchmen and the brakemen, all of them, though humble in position, are indispensable parts of a machine whose workings are a marvel of modern civilization.

These men, hundreds and thousands and thousands of thousands in number, are, as a class, men that are seeking to become more and more self-respecting men. They organize themselves into "unions" for mutual insurance, for fellowship in life, for succor in sickness, and for an honorable burial when they die. For the exclusion of evil men from their ranks, they organize themselves. There is a moral purpose that animates them. They seek for intelligence, sobriety, and fidelity among themselves, and for mutual protection against the natural selfishness of employers and capital.

Thus far their organizations are eminently wise; but there is a foreign element which has come into these "unions" in America. It is a poisonous element. It is a usurpation of authority over one's fellow workmen. It is an assumption of right by the exercise of force to compass their ends—an assumption which surpasses the most bitter tyranny of Europe, and which would not be tolerated a day in a crowned head. What right has any association of men to say to the master mason, "You shall not work as a laboring man on your own contracts?" What right have they to say to an employer, "You shall never have more than five or six apprentices to learn this trade?" What right have they to say to him, "You shall employ nobody but 'union' men?" What right have they to dictate to free men as to how they shall carry on their business? They have a right to say, "If your business is carried on in a way that is prejudicial to our interest we will not work for you." The continent is large; the door to enterprise is open for all; and let no man be compelled to work where it is not for his interest to work; but who clothed any of these "unions" with authority to say, "Such men shall work, and only such men shall work; so many shall work, and only so many shall work; they shall work under such conditions, and they shall work only under such conditions?" It is a denial of freedom, it is a blow at personal independence and popular liberty; and if there were any considerable danger of its spreading, if it did not carry in itself the elements of its sure defeat, it would be time to raise the banner and lift the voice like a trumpet, against this clandestine industrial tyranny.

It is the virus that has vitiated the course of these disaffected railroad laborers; and it is a subject of profound regret to all who sympathize with them that they have put themselves in an attitude in which their friends cannot defend them, and in which the public peace and safety require that they should be resisted and subdued.

The reduction of their wages is the solitary grievance which is alleged as an excuse for their misconduct. But men whose pay is not sufficient have a right to refuse to work for the pay. They are not bound to work for less than they deserve. But they have forbidden those men who are willing to work for that pay to avail themselves of it. It is not enough for them to say, each man for himself, "I will not work for one dollar a day," but they turn to their neighbor and say, "Neither shall you." They say, "I have a family to support, and a dollar and a half never can feed my children;" and when a man who is without a family says, "It will feed me," the response is, "It shall not feed you; for if I will not work for that, neither shall you work for it." They have seized the property of companies, and domineered it. They have taken the law into their own hands—or, rather, they have trodden it under their own feet. They have disturbed the public peace by riot and violence against the State laws, and against the laws of the whole of these United States. They have thrown the vast business interests of this country into confusion. And, that every element of blame may rest upon them, they have shed the blood of those who have the authority of their State in their hands. And this has been done, evidently, by a combination running through the whole country, from ocean to ocean. It exhibits the tendency of a class interest to seek its ends, not by open, reasonable methods, but by an organized conspiracy which has in it every element both of opprobrium and of peril.

The strike went to show that labor had not received its full remuneration; that working men were subjected to a great many petty injustices, and that the way of acquiring prosperity was not the way of the grog shop. It was by the way of more work, better work, more refinement, nobler ambitions and larger manhood. Discontentment and strikes did no good, neither did the attempt to make men work eight hours with wages of fifteen. It is an American doctrine that every man must stand upon his own level. It is said that the world owes every man a living. That is so when a man earns it. Again, that the world should take care of all men. Man was born to take care of himself, but sometimes he is cared for by his mother, and afterward by his wife. Man should be valued according to his achievements. If he achieved as much as a fly he is entitled to an equal reward for what he did. If he is an eagle, he has a right to the whole air. No man has a right to go high by artificial merits; it must be through merit. Men may go into a rebellion, and learn that two pounds weigh more than one. The law of nature is on the side of two pounds. A man who drinks beer and grumbles, and works one tenth of the day, says that he is as good as the next man. That depends on who is the next man.

The test of all governments and combinations was, "How much individual liberty did they secure to each one?" To restrict the individuality of a single man was pernicious and poisonous. The tyranny of combinations was just as much a tyranny as that of the despot upon the throne. Human nature was the same all the world over. He said it would be the glory of his life if he might see the majority of the working men happy in houses of their own. In speaking of the adversity that overtakes many, he said that when a man has hard times he should not grumble or complain. He ought to be manly enough to be manly when he is poor as well as when he is rich. When he comes down to a single dollar a day, must he throw up his hands in despair? Is that the manly course for a man? If you are being reduced, go down boldly to poverty. Bankruptcy never hurts a man until it takes his manhood. Working man, work more and grumble less. Mr. Beecher said that he did not say that a dollar a day was enough for a working man, but it would give a man bread. Man ought to be superior to his circumstances. He should not suffer the outside world to shake him. He should stand, not crawl. Don't sneak, but bear adversity as well as prosperity.

A NEW method of preserving the bodies of the dead has just been exhibited in Berlin. It is the invention of a Mr. Tominetti of Hamburg, and consists in a thorough drying of the tissues by means of an injected gas, which absorbs the moisture and drives it out through the pores. Prepared in this way, an animal preserves its form and color in perfection. Mr. Tominetti exhibited a bear which had thus been treated after his death four months previously. Slices were cut from the body to show that the tissues were not destroyed but, except for their desiccation, were preserved in excellent condition.

Inventions Patented in England by Americans.

July 10 to July 17, 1877, inclusive.

BALE TIE.—S. N. Drake *et al.*, New Orleans, La
BLIND ROLLER.—Henry Hughes (of San Francisco, Cal.), London, Eng.
BOOT AND SHOE MACHINE.—G. W. Copeland *et al.*, Malden, Mass.
BUTTER TRAY, ETC.—C. Ingersoll, Beloit, Wis.
DOOR AND WINDOW SASH.—H. E. Russell, New Britain, Conn.
GAS APPARATUS.—E. T. Thomas, New York city.
GAS LIGHTER.—K. Vogel, Chelsea, Mass.
HERMETICALLY SEALED PACKAGES.—C. Lewis, Boston, Mass.
LOCK.—H. E. Russell, New Britain, Conn.
LUBRICATOR.—R. Hawarth, New York city.
MOULDING MACHINERY.—A. K. Rider, Walden, N. Y.
OZONE, PURIFYING.—F. W. Bartlett, Buffalo, N. Y.
PLAITING MACHINE.—H Albrecht, Philadelphia, Pa.
SAW BLADES, MANUFACTURING.—J. A. House, Bridgeport, Conn.
SHEET METAL PIPE.—H. K. Flager, Boston, Mass.
STEAM PACKING.—H. Greenough, Boston, Mass.
TOY.—L. Seasongood, Cincinnati, O.
WATER METER.—H. B. Hayes, Woburn, Mass.
WOODEN SOLED SHOES.—T. R. Hyde, Westerly, R. I.

NEW BOOKS AND PUBLICATIONS.

A POPULAR TREATISE ON WATER SUPPLY ENGINEERING: relating to the Hydrology, Hydronamics, and Practical Construction of Water Works in North America. With numerous Tables and Illustrations. By J. T. Fanning, C.E. New York: D. Van Nostrand, Publisher, 23 Murray street. 1877.

The author says in his preface that this work is intended more for those who have already had a task assigned for them, and who, as commissioner, engineer, or assistant, are to proceed at once upon their reconnoissance and surveys, and the preparation of plans for a public water supply. Its aim is to develop the bases and principles of construction, rather than to trace the origin of or to describe individual works. The book is divided into three sections, the first treating upon the collection and storage of water in its impurities; the second upon flow of water through sluices, pipes, and channels; the third, practical construction of water works. In the introductory chapter of the first section the influences of a liberal water supply are pointed out, and then follow statistics and tables of water supplied to various American and foreign cities, the ratios of consumption during the different seasons, and the reserve capacity necessary to provide water for the use of a fire department. To those who have to estimate large quantities of water the statistics and diagrams will prove of great value. The hydrology of the United States is discussed in chapters relating to rainfall, flow of streams, storage and evaporation of water, supplying capacity of water sheds and supplies from wells and streams. The second section opens with special characteristics of water, its weight, pressure and motion, and is followed with chapters on the flow of water through orifices, ajutages, pipes under pressure, upon channels, and to measuring weirs and weir gauging. The third section includes about one half the entire book and embraces the practical construction of water works. The first subjects discussed are reservoirs, embankments and chambers, and canal banks. The proportions of waste ways and the safety valves of embankments are fully discussed. Waste weirs and dams of masonry and timber cribwork are exemplified and described. Following this are chapters on proportions, construction, and laying of conduits of masonry and mains and distribution pipes of metal, and the valves, hydrants, and appendages of the distribution systems. The clarification of water is fully discussed and sediments and impurities are duly considered, the processes of treatment by infiltrations, precipitations, and filtrations are described. The management and maintenance of filter beds and basins are illustrated and described. The concluding chapter is a brief discussion of the several systems of water supply, and includes a review of the methods of gathering and delivering water, choice of water, systems of pumping, etc. An appendix is added, giving tables, equivalents and formulas, of value to hydraulic and mechanical engineers.

THE ANTELOPE AND DEER OF AMERICA. A comprehensive scientific treatise upon the natural history, including the characteristics, habits, affinities, and capacity for domestication, of the Antilocapra and Cervidæ of North America. By John Dean Caton, LL.D. New York: Published by Hurd & Houghton. Boston: H. O. Houghton and Company. Cambridge: The Riverside Press. 1877.

The author says that the natural history of these animals, the pursuit of which has been his favorite recreation, has occupied his leisure for many years, during which time he has kept in domestication all of the American deer of which he treats, except the moose and the two species of caribou. This has given him opportunities of making observations of them, which in the wild state he could not do. The habit of noting these observations accumulated a vast amount of facts, which those competent to judge deemed of scientific value, and so he was induced to put them in a form that would be available to others. He makes no attempt to exhaust the natural history of the few animals of which he treats, but contents himself with a mere monograph of them, leaving their osteology and anatomy almost entirely for other hands, invading their province only so far as is necessary to give completeness to the externals of the animals studied. His aim has been to carefully observe facts and to accurately state them, and to truly exhibit nature and her workings. In the illustrations he has tried to make them true to nature regardless of the question whether they were ornamental pictures or not. The full figures, as far as possible, are drawn from photographs, taken while the animals were standing at ease, believing in this way he could give a truer idea of them than when they were made to assume striking and unusual attitudes, although these attitudes might be more attractive to the eye. The book is written in a free and easy style, interspersed with anecdotes enough to make it interesting, even to those who care but little for the subject which the author has chosen for his discourse.

AN ELEMENTARY COURSE OF CIVIL ENGINEERING FOR THE USE OF CADETS OF THE UNITED STATES MILITARY ACADEMY. By I. B. Wheeler, Professor of Civil and Military Engineering in the United States Military Academy, at West Point, N. Y., and Brevet-Colonel, U. S. Army. New York: John Wiley & Sons, 15 Astor Place. 1877. Price $4.

This treatise has been compiled and arranged especially for the use of cadets of the United States Military Academy and with regard to the limited time allowed them for instruction in this branch of their studies. The author defines civil engineering as the designing and building of all works intended for the comfort of man, or to improve the country by beautifying it or increasing its prosperity, and gives in regular order the elementary principles, common to all branches of engineering, which are essential for the student to learn, that he may understand the nature of the engineer's profession, and know how to apply the principles that he has already acquired. In the first part, building materials are taken up; and under the head of wood, all kinds of timber are treated upon, their kinds, classes, defects, durability, and preservation, noticed. Stones, bricks, concretes, and glass follow. The metals used in engineering constructions are then taken up; uniting materials as glue, lime, cements, and mortars follow, and preservatives as paint, japanning, oiling, varnishes, coal tar, asphaltum, metal covering, etc., close this part of the work. Part second treats upon the strength of materials, as strains, tension, compression, shearing, flexure, torsion and strength of bearing. Part third treats of framing. Part fourth of masonry and masonry construction. Part fifth of foundations on land and in water. Part sixth of bridges, as trussed, tubular or iron plate, arched, suspension, movable and aqueduct, and of bridge construction in general. Part seventh treats of roofs, and part eighth of roads, their location and construction, closing with a chapter on railroads and one upon canals.

THEORY OF TRANSVERSE STRAINS, AND ITS APPLICATION TO THE CONSTRUCTION OF BUILDINGS. By R. G. Hatfield, Architect, Fellow of Am. Inst. Architects; Mem. Am. Soc. Civil Engineers; Author of the American House Carpenter. John Wiley & Sons. Price $6.

This book is intended especially for architects and for students in architecture and contains much that should be useful to civil engineers. Those who can command the time to read the work carefully through will here find the subject of construction so far as it applies to floors, girders and roofs, carefully elaborated and thoroughly elucidated, algebraically, graphically, and arithmetically. Those who have not the leisure for studying the work in detail may still derive assistance from its many useful results; which are classified in a directory, showing at a glance the particular rule needed in any given case, whether it be of a lever, a beam, a tier of beams, a header, a carriage beam with one, two, or three headers, a girder, solid, framed, or tubular, or a roof truss; and for those who are very limited in time, there are tables containing the dimensions required for floor beams and headers, of four several kinds of wood and of rolled iron; and all these are for dwellings, office buildings, halls of assembly, and first class stores. There is a table showing the thickness of floors made of timber, solid. In many other tables are recorded the results of experiments upon several of our American woods, made by the author expressly for this work, to test their resistance to flexure, rupture, tension, compression and sliding. Other tables give the values of constants which are derived from these experiments and which are used in the rules given in the body of the work. This feature gives to the work its great practical value, as well as the manner in which the principles of the science have been so carefully and lucidly developed. This work ought to become popular with students; the steps by which access is gained to the more intricate portions of the subjects treated are so easy and gradual that those even whose knowledge of algebra is quite limited will, by ordinary attention, be able to progress satisfactorily, and in a reasonable time become familiar with the more important of the subjects treated. To secure a knowledge of the useful results to the student unversed in even the simpler processes of algebra, a practical example is given to elucidate every rule, in which the practical application of the rule is shown by arithmetical processes worked out in detail. For the purpose of fixing in the mind of the student the subject matter of each chapter, there are appended questions of a practical nature, and at the end of the work the answers to these questions are given. An extended index, as well as a table of contents, will facilitate the labors of those who have occasion to consult its pages upon any particular subject.

REPORT OF THE DIRECTORS OF CENTRAL PARK MENAGERIE; Department of Public Parks, City of New York, for the year 1876.

The additions to the menagerie of the Park during the year are: mammals, 197, birds 145, and reptiles 51. The number of animals was 983. As compared with previous years, the donations have gradually decreased, which is attributable to the establishment of zoological gardens in other cities or where the owners of animals find markets for their specimens. The number of specimens during the year have diminished from the effect of a reduction of appropriation of funds and an order not to receive animals unless the owners agreed to furnish necessary food for them. There was an increase of visitors to the menagerie, which is accounted for by the great influx of strangers passing through the city, to and from Philadelphia, to visit the Centennial. The amount expended for the year was $15,418.10, against $18,089.92 of the previous year, being a reduction of $2,671.82.