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Contents.

(Illustrated articles are marked with an asterisk.)	
Arsenic, dangers of 130	
Baking powders, alum 136	infection, new view of 132
Batchelder, Samuel 128	Inventions, miscellaneous 134
Bretling machine, new* 134	Jubilee, cable, a 129
Boilers, steam	Locomotives, American, in Italy 136
Book covers, new protector for* 131	Locomotives in Switzerland 137
Canal, ship, new	
	Mars, the planet
	Meats, preserving
Check, door, novel*	Money by mail
Comets, origin of	Matural history notes 135
Convict labor	otes and queries
Cooper, Peter, honor to 128	Oysters, how fattened 131
Copper, Lake Superior	Patents, engineering, recent 131
Cream-raising apparatus, new. 134	Patents, household
Death, physical consequences of. 182	Peru, ancient works of 138
Dentistry, progress of 133	Plague, the, in Russia 128
Diamonds, how to distinguish 132	Railway up Vesuvius 137
Diphtheria. history of	Regulator for clocks, pneumatic 130
Does invention discourage labor. 132	St rvation in the pursery 131
Drill, ratchet, new*	Steam engine economy 133
Eagle owl, Oriental* 135	Stone cutting, revolution in 138
Electric lighting 138,	Strikes in Liverpool and London. 128
England, poor	Farming, revolution in 131
Exhibition. Australian 137	Trade arbitration in England 129
Farmer's best friend, the 129	Vase, Alhambra*
File guard, improved* 131	Want, the great
Food adulteration 129	Whale, humpback*
Gun tool new* 131	

TABLE OF CONTENTS OF

THE SCIENTIFIC AMERICAN SUPPLEMENT

No. 165,

For the Week ending March 1, 1879.

Price 10 cents. For sale by all newsdealers. I. ENGINEERING AND MEC; IANICS.—The Derriey Cylinder Fast Newspaper Printing Press, with one-half page illustration.—Gun Cotton, and some of its military uses. Its remarkable explosive powers. Interesting particulars of trials, with two figures, showing its power to break metal when applied upon the exterior. Its uses in the cavalry service.

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M.D., Professor of Natural Sciences, Baltimore City College.

C. CHEMISTRY AND METALLURGY.—Notes on the Microscopical Examination of Iron. From a Report to the Society of German Engineers. By A. MARTENS. With 11 figures.—An important and valuable paper, showing the ease and certainty whereby, by the use of the microscope, the comparative value of iron, of different kinds or specimens, may be accurately determined. The paper is accompanied by drawings showing the form and appearance of the crystals of Iron, of graphite as it appears in the cells and cavities of iron, the appearances of good and bad Iron, rough and polished tin, etc.

Meeting of the New York Academy of Sciences. A paper by Dr. HENRY WURTZ on some new and interesting minerals discovered by him in the Silver Islet Mine. Huntilite and animikite, with their chemical compositions.

him in the Suver and Sulcated Carbon Filters. A series of com-chemical compositions.

Spongy Iron Filters and Silicated Carbon Filters. A series of com-parative experiments therewith, with a valuable table of results. By

Spongy Iron Filters and Silicated Carbon Filters. A series of comparative experiments therewith, with a valuable table of results. By G. W. WIGNER, F.C.S.

The Artificial Syntheses of Organic Compounds. By JOHN M. STILLMAN, of the University of California. Showing the chemical processes and formulæ for the artificial production of Formio Acid; Alcubol; Glycerin; Oli of Bitter Almonds; Oli of Cinnamon; Wintergreen Oli; Carbolic Acid; Indigo Blue.

Preservative Gases for preserving Meats and Other Foods. How produced. By Dr. B. W. RICHARDSON.

NATURAL HISTORY, GEOLOGY, ETC.—The Heat of the Cometock Mines. By Prof. JOHN A. CHURCH, E.M. A very interesting paper, containing details of the temperatures of the rocks of the Comstock Mines at the different depths, the heat of the waters therein, the probable sources of the heat, the rate of transmission of heat through the rocks, with appliances for cooling and ventilation.—Origin of the Metallic Iron of Greenland.—The Florida Alligator.

AGRICULTURE, HORTICULTURE, ETC.—The Latest Advances in Fult Culture. From the Proceedings of the Western New York Horticultural Society Apples, and how to dry them in a fine white condition. The latest new fruits. Peach growing, training, thinning and cutting back. The secret of success in peach growing. The peach and apple tree byrers and their remedy. Grapes; how to cure mildew. The coding moth. Strawberries; new varieties, etc. Best plums.—Sowing Seeds.—Indian Nut Parties in Newada.

The War with Insects. By Dr. JABEZ FISHER.

VI. MISCELLANEOUS.—Chicago claims the next International Exhibition.—A Co-operative Manufacturing City.—Postal items.—Fisheries on the Canary Islands.—New Discoveries at Ancient Troy.—Ancient Glazed Pottery.—The Dignity of Labor.

STRIKES IN LIVERPOOL AND LONDON.

pool have stopped at Queenstown, and their owners do not the port; and steamers arriving can be discharged only by men brought from other ports and protected by the police and military.

The fleet chartered at Liverpool to convey troops and supplies to South Africa will have to be fitted out at other ports. The shipowners' committee and a deputation from the strikers met on the 12th, the former proposing to pay the old wages, provided the day's work shall be one hour longer. owners' committee then, on their own responsibility, suggested that the question be referred to arbitration. This suggestion was also rejected.

The threatened strike of the Amalgamated Society of makers and a hundred other trades intend to follow.

In view of the fact that strikes are invariably failures on loss of trade which England's rivals are only too ready to that country as well as this. take up and keep.

HONOR TO PETER COOPER.

evening of February 12, by a large gathering of prominent citizens, and the investment of the venerable inventor and philanthropist with the honorary degree of Doctor of Laws, conferred by the Regents of the University of New York. More correctly, perhaps, it might be said that the University of New York was permitted to honor itself by enrolling the name of Peter Cooper among those of its most honored alumni.

The life of Peter Cooper is typical of the nineteenth century and the American people—a time and country which have done so much to make possible the experience which, to use Mr. Cooper's own words, has compelled him "to believe that it is to the application of science to the laws of life that we must look for all future improvements in the condition of mankind." As one of the leaders in the application of science to human industry, both by personal invention and through the influence of the noble institution of practical learning which he founded, Mr. Cooper has won a place in the esteem of his countrymen excelled by few. To those who have to make their way in life by unaided effort and personal worth, the successful career of Peter Cooper is a perpetual encouragement and model. May he long enjoy the satisfaction of seeing the beneficent fruits of his industrial, scientific, and philanthropic efforts.

SAMUEL BATCHELDER.

Massachusetts has lately lost two notable sons, both aged men-Richard H. Dana and Samuel Batchelder. The first was a man of letters, and famous. No New Englander would dare admit that he had not heard of the author of the "Buccaneers." American encyclopædias give full particulars of his life and writings, though the one was uneventful, cognized: 1. The stage of invasion; 2, the stage of intense and the other without any marked effect upon the world's progress, even in literature. Mr. Dana was a dreamer, and his intensely practical countrymen rewarded him with fame. Mr. Batchelder was a doer, one of the pioneers in the cotton literary standard of culture hitherto prevailing leads invari- change from this to the second stage is marked by fever, ably to the exaggeration of the importance of essayists and usually beginning with a chill, and followed by extreme ergy and useful invention will be more justly esteemed among men.

Mr. Batchelder was born in Jaffrey, N. H., June 8, 1784-United States. His parents removed to Ipswich, where, in 1808, the young man helped to build the second cotton mill of the cotton industry in this country, as to justify the remark that, "If he did not create this great manufacturing interest, he watched over it in its infancy, and contributed by his enterprise, sagacity, and inventive genius to its rapid development and its vigorous and far-reaching prosperity."

facturer who understood all the details of his business, and which Lowell has been famous and which have been staple days. The mortality is greater than that of any other

articles of commerce ever since. In 1831, when the success The strike in Liverpool now (February 13) includes not of Lowell's manufacturing enterprise had become acknowonly the sailors and dock hands, but laborers generally, ledged such as had never before been known in New Engcarters, and carpenters. The entire trade of the city is land, Mr. Batchelder united with parties in Boston in purparalyzed. Thirty-five grain laden ships destined to Liver- chasing the site of a factory in Saco, Me., then recently burnt, and took charge of the erection of the York Mills, know where to send them. Meanwhile there is danger that becoming their superintendent. He soon saw and apprecithe grain will heat and spoil. Few, if any, ships are leaving ated the capabilities of the place, and with his associates secured the whole water power at what was then called the Saco Falls, and laid the foundation of another great manufacturing city.

Having made the York Mills one of the most successful corporations in New England, and secured a competency, Mr. Batchelder, in 1846, resigned his trust and removed to Cambridge, intending to devote himself to his library, which was large and choice, to his grounds, and to the gratification This proposition was rejected by the delegation. The ship- of his tastes generally. But when the great manufacturing enterprise at Lawrence was projected he again was swept in as one of the proprietors, and soon after he became actively engaged once more in manufacturing enterprises, holding the office of director in many corporations, and that of treas-Engineers has begun at London, involving the engineers, urer in the Portsmouth Mills, until 1855, when he took boiler makers, steam engine makers, iron moulders, and charge of the York Mills, which had declined during his abother iron workers in all the great establishments which sence, put them in running order, and has since been treasordered a reduction in wages. It is said that the pattern urer and manager of them, as well as of the Everett Mills at Lawrence.

An account of Mr. Batchelder's success as an inventor was a falling market, this action of the workingmen of Liverpool given in the SCIENTIFIC AMERICAN last summer, in connecand London-both cities being overcrowded with laboring tion with an illustrated description of his ingenious, simple, people-would seem to be anything but prudent. Every and efficient dynamometer. Mr. Batchelder also invented day's delay of manufacturing and commercial industry only the steam cylinders and connections so universally used for hastens the decline of England from the commercial and in- drying yarns. About the year 1833 or 1834 he invented and dustrial supremacy she has so long enjoyed; and the laboring applied the first stop motion to the drawing frame, which he part of the community must be the first to suffer from the 'patented in England; and it has since been in general use in

THE PLAGUE IN RUSSIA.

The condition of things in Southeastern Russia is unmis-The eighty-ninth anniversary of Peter Cooper's birthday takably alarming. There have been several local outbreaks was appropriately celebrated at his house in this city on the of plague in Turkey and in North Africa during recent years; and during the past year the movement of Turkish levies, the herding together of homeless refugees, the massing of Russian troops in unhealthy districts, and the return of troops from infected places, have furnished conditions extremely favorable for the development and spread of epidemic diseases. Whatever the cause, it is certain that an epidemic of a peculiarly malignant character began in the low country north of the Caspian Sea early in the fall, and has since steadily spread northward and eastward in spite of the unfavorable season and the most energetic attempts to isolate the infected regions.

> At first the disease was described as a malignant typhus fever, a disease which has prevailed very largely among Russian troops in Turkey. Later reports from Russian physicians give as the characteristics of the existing epidemic the well known symptoms of the true plague, but describe them as extremely rapid in their development; the victims generally dying within ten hours of the first attack, sometimes within four hours. Ninety per cent of those taken with the disease die, and naturally the wildest alarm prevails in the districts menaced. A large number of Cossacks who fled from one of the first infected villages were lately found frozen to death on the banks of the Volga. The dead lie unburied in the streets, and as soon as warmer weather returns the festering corpses must materially aggravate the pestilence.

> Leibermeister describes the true oriental plague-whose excursions into Europe during former centuries proved so terribly fatal—as a fever of a most acute and violent type, accompanied by buboes or carbuncles, and often followed by a long train of disorders. Four stages of the disease are refever; 3, the stage of fully developed buboes; 4, the stage of convalescence.

The first stage begins suddenly, sometimes with fever. The general health is seriously disturbed. There is great industry which has given New England so much of her bodily and mental weakness, headache, dizziness; face pale wealth and influence; a brain worker of singular power; a and flabby, features distorted, eyes languid, speech awkward, man of science and invention. Look for his name in the gait staggering; nausea, vomiting, and diarrhea occur. This American Cyclopædia, and you will not find it. The purely stage lasts from a few hours to one or more days. The verse writers, and the almost total oversight of practical lassitude and fever, with its attendant consequences. Soon thinkers. By-and-by the value of science and practical en- the patient passes into a well formed typhus condition, with delirium, passing on to stupor. The tongue becomes dry, cracked, hard; the tongue, teeth, lips, and nostrils, are covered with a dark mucus or with soot black crusts: five years before the first cotton mill was erected in the cardiac weakness or paralysis follows. After two or three days buboes appear and the third stage begins. The fever diminishes, and a sticky, offensive perspiration covers the in New Hampshire. Afterward he took charge of it, becom- | body. The pulse becomes fuller and less rapid, and the ing so closely associated with the establishment and growth mind grows clearer. Buboes now appear on the groin, with carbuncles on the back of the neck and other parts of the body, and gangrene.

Convalescence begins between the sixth and tenth days. and is often protracted by continued suppuration of the buboes. Among the sequelæ of the disease are enumerated Mr. Batchelder early became known as a scientific manu-parotitis, furuncle, abscesses of the skin and muscles, pneumonia, protracted fever with continued typhus condition, was intrusted by capitalists with the founding of the cotton dropsy, partial paralysis, mental disturbance; etc. Genuine industry at Lowell. He built the Hamilton Mills, and after- relapses also take place. Death may occur during any stage ward, while in charge of them, designed those fabrics for, of the disease, though generally between the third and fifth