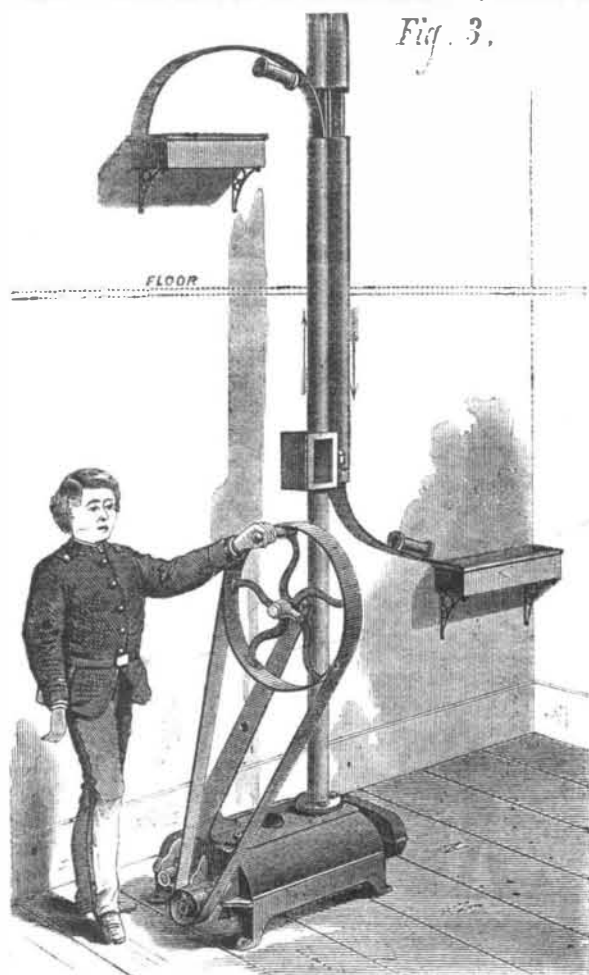


transmission consists in having tubes of about eight inches in diameter, laid under the streets and made to communicate with the various lamp post letter boxes.



ant dropped into the tube that leads onward to the next station, and so on. The general adoption of this system by the post office, allowing that it will operate through tubes of half a mile length as effectively as it does at the Western Union office, would expedite the collection and delivery of city postal matter, and greatly promote the public convenience.

THE INDUSTRIAL CONDITION OF GERMANY.

The delusive prosperity which Germany enjoyed while the French indemnity was passing into the country has resulted as disastrously as the similar condition of things consequent to our war did with us. At the close of hostilities there was much to be done, money was plentiful, and wages high.

Describing the industrial and financial experience of the past five years in Germany, a Tribune correspondent pictures a condition of things very easily understood in this country: "The abundance of capital gave rise to a reckless prodigality in all sorts of private enterprises. New railways were undertaken, great manufacturing companies were established to rival Krupp, and shipyards to compete with the Lairds were organized.

Multitudes of great manufactories are unable to keep up operations, and wholesale discharges of hands are the result. The reduction in wages has been twice as severe as in this country, with a proportionally larger number out of employment.

Scientific American.

MUNN & CO., Editors and Proprietors. PUBLISHED WEEKLY AT NO. 37 PARK ROW, NEW YORK.

O. D. MUNN. A. E. BEACH.

TERMS.

One copy, one year, postage included.....\$3 20 One copy, six months, postage included..... 1 60

Club Rates:

Ten copies, one year, each \$2 70, postage included.....\$27 00 Over ten copies, same rate each, postage included..... 2 70

By the new law, postage is payable in advance by the publishers, and the subscriber then receives the paper free of charge.

NOTE.—Persons subscribing will please to give their full names, and Post Office and State address, plainly written, and also state at which time they wish their subscriptions to commence, otherwise the paper will be sent from the receipt of the order.

VOLUME XXXII., No 15. [NEW SERIES.] Thirtieth Year.

NEW YORK, SATURDAY, APRIL 10, 1875.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as 'Air for combustion', 'Animal wonders', 'Answers to correspondents', 'Arsenic, dissolving', 'Astronomical notes', 'Batteries, a cheap galvanic', 'Bessemer steamer, trial of the', 'Boilers, dimensions of', 'Boilers, testing', 'Boilers, zinc in', 'Boiler working pressure', 'Brain, chemical constitution of', 'Bronzes incrustated', 'Bronzing cast-iron', 'Business and personal', 'Canal in Italy, proposed', 'Celluloid', 'Chimney, dimensions of', 'Chimney, ventilation by', 'Chloride of lime in alcohol', 'Chloroform, a bear under', 'Coal, a bushel of', 'Coal burns, how a piece of', 'Colored fire', 'Cure for wounds, new', 'Curve of a cannon ball', 'Cylinders, jacketing', 'Ear, substances in the', 'Engine cylinders, oil in', 'Eggs, preserving the color of', 'Electric light, the', 'Electric machine, small', 'Electromagnet', 'Electromagnetic engine', 'Engine indicator', 'Engines, boat', 'Engines, fire, power of', 'Engines, small', 'Exhibition, French marine', 'Fence pickets, machine to make', 'Ferry, plants in a', 'Fire pots, cast iron', 'Fires on ships, extinguishing', 'Fish, a novel decoy', 'Fish joint, the inventor of', 'Fluids, storage and handling of', 'Free lance, suspended', 'Furnace, a cheap powerful', 'Furnace for melting iron', 'Germany, industrial condition of', 'Glass, alloying', 'Grate bars for wood fuel', 'Gravity in the earth', 'Gray, Dr. J. E.', 'Green paper, arsenical', 'Hoisting machine, improved'

HOW SCIENCE IS ANNIHILATED.

Everybody admits that a man who sets up as a doctor with out first submitting to a careful medical training is a knave or a fool. Everybody admits that to practise medicine properly requires a very thorough preliminary education, and no little practical observation of the ills that flesh is heir to.

It is very much the same in Science. To be able to read a book of Science, or even floating paragraphs about it, is taken by very many people as evidence enough of their ability to criticise it, especially if they happen to have some little right to speak in some other department of thought.

Of this character was the lofty rebuke to Science administered the other day by a somewhat prominent Doctor of Divinity, in a morning paper: a rebuke, we may add, which has been the source of great consolation to more than one dear soul alarmed at the spread of knowledge, in proof whereof we have, in a subsequent issue of the same paper, letters of rejoicing in regard to the Doctor's championship.

The special science which falls under the Doctor's condemnation is geology—if, indeed, it is in any way worthy of being called a science. Particularly is it rebuked for talking of periods of time more protracted than the Hebrew scriptures provide for.

and this, incalculable ages have come and gone, say the geologists. Sheer assumption, says the Doctor, for deep sea soundings prove that chalk is now being deposited in the Atlantic ocean; today is the chalk age, and your long drawn periods of time are pure myths!

Again, the geologists set the carboniferous epoch so far back that the six thousand years of Hebrew history dwindle to insignificance. All that time is wiped out with a paragraph, a floating paragraph which the Doctor has discovered going the rounds of the country newspapers, to the effect that the wooden supports used in certain of the Hartz mines have been converted into lignite since they have been put in, only a few centuries ago.

"What will geologists say to that?" asked an excellent lady, after reading the Doctor's triumphant overthrow of their science—"falsely so called."

We could not say, though we modestly surmised that, if compelled to notice the indictment, they would probably say: "What of it?" What has chalk to do with the antiquity of the cretaceous era? Who that knows anything of geology imagines that the age of a coal seam is in any way dependent on the time required to turn wood into coal?

Besides, if that is the line of argument, why stop halfway? Any geologist will willingly furnish the Doctor with arguments ever so much more sweeping than those he uses. For instance, in the South Seas, the corals of today are forming strata that are the exact counterparts (fossils excepted) of—the Trenton limestones. In other parts of the world sand deposits, such as composed the Potsdam sandstones, are now forming.

That it is at all necessary to comprehend a theory or an argument, or the bearing of known facts upon either, seems never to occur to critics of this sort. Indeed, the first requisite of an anti-science critic would rather appear to be a thorough and radical misapprehension of what Science teaches.

A very pretty, though very mild, case of a scientific misapprehension occurs in an editorial in the last issue of the American Garden. It would not be noticeable in a strictly evangelical family paper, but seems a trifle odd in a publication devoted to a department of natural science.

The editor, very properly, dubs the article "Scientific Vagaries." Its subject is a paragraph from a recent lecture by Sir John Lubbock, upon the natural relations of insects and flowers. After mentioning the observations of Sprengel and Darwin, Sir John remarks that it is to insects that we owe the beauty of our gardens and the sweetness of our fields, and that the flowers owe to them, not only their scent and color, but their very existence in their present form.

This, says our critical editor, scornfully, is a fair sample of the errors and vagaries into which intelligent men may be led—men who see things from only one point of view, and endeavor to twist and bend every fact or circumstance in Nature to make it fit the theoretical structure of which their preconceived notions suggest the plan.

"No doubt," our critic adds, "the color and scent of flowers attract insects to them for the purpose of aiding or bringing about the fertilization and consequent fructification of the seed for the continuation of the species—this latter being the end and aim of all physical life." [What if Darwin had said that?] It is freely admitted, also, that the intricate and wonderful arrangement of floral appendages are often peculiarly striking, and apparently throw in the way of the fertilization of the flowers obstacles that can be counteracted only by the aid of insects.

"Is it not," he asks, "more easy to believe that there is an intelligent Creator, First Cause, or Primal Cause (as men have variously expressed it), who has created things as they are?" etc., etc.—as though easiness of belief had anything to do with the matter. Then he winds up with this ingenious double question: "Are not the ideas of Sir John Lubbock