FACTS ABOUT COAL GAS.

A bill for regulating the sale of gas in Great Britain having been introduced into the House of Commons, the London *Journal of Gas-lighting* publishes the testimony of witnesses that have been examined by the committee of Parliament, in order to obtain correct information on the subject. We give, below, the substance of some of the testimony which was elicited.

A tun of Newcastle bituminous coal yields 9,200 cubic feet of gas; its price is sixteen shillings ($3.88) per tun. It is the practice in many English gas-works to mix one tun of Scotch cannel with every two of common coal. They thus obtain about 30,000 cubic feet of gas of a very superior illuminating power. The cannel coal costs £2 5s. (about $10.90) per tun in London. In that city, also in Manchester and several other large towns in England, the price of gas ranges from 3s. 9d. to 4s. 6d. per 1,000 cubic feet, the highest being but a little over $1; and yet the profits range from 9 to 10 per cent to the companies. Pure cannel coal gas of a high illuminating quality is only $1.25 per 1,000 cubic feet. The standard of illuminating power for gas made from cannel coal is that of 12 sperm candles for three cubic feet, and 20 candles for five cubic feet; that is to say, five cubic feet of this gas will give a light equal to that obtained from 20 sperm candles, and hence a "5-foot burner" is one which gives a light equal to 20 sperm candles; a "3-foot burner" gives a light equal to 12 candles. The main gas pipes in London are charged to a pressure of one inch; the pressure at the burners only amount to one half of this, and is subject to the control of the consumer. The pressure in the mains is generally greatest in the early part of the evening, and consumers frequently use more gas than they are aware of—some of it escapes unconsumed. The pressure of gas increases in pipes one-tenth of an inch for every 10 feet of elevation; at the top of a pipe at an elevation of 100 feet, the pressure is one inch greater than at the base. The pressure is determined by a gage used for the purpose. Gas generally contains ammonia, sulphureted hydrogen, and bi-sulphide of carbon. These impurities injure its illuminating qualities. The two former are capable of being removed with lime and sufficient washing, but the bi-sulphide of carbon remains incapable of removal by any of the ordinary means yet employed.

As the subject of gas-burners has recently formed the topic of considerable discussion at the meetings of the Polytechnic Association, in this city, we will state that a patent has been lately taken out in England (by A. L. Downie) for a burner which appears to be somewhat different in its construction from any described during those confabulations. The top of this burner is bell-shaped, and has a broad flange around it, through which holes are bored from beneath in such a manner as to conduct jets of air diagonally into and across the flame, which keep up a sufficient supply of warm oxygen and the flame is said to be very bright. This burner also contains a small recess, in which is a disk of perforated pasteboard and another of thin cotton cloth, stretched on rings, and so arranged as to form a chamber between them. The gas passes through this chamber to the orifice, and is diffused so as to flow steadily to the burner and prevent flickering. This method of stuffing the burner to diffuse the gas is simple, and the pasteboard and cotton cloth can easily be removed if they become clogged, and the renewal of them is a mere trifle of trouble and expense.

THE CARPET TRADE.

It is singular what a remarkable taste the American shows for a good carpet. It seems to be impossible for him to walk comfortably through life without a carpet under his feet. Every man who occupies a few square feet of house-room must have the brick or the boards protected from his tread by so much carpeting. Here carpeting appears in a thousand places where in other parts of the world it is never seen. The English shopkeeper thinks the bare boards good enough for the reception of his customers, and seldom does the merchant think of adding to the elegance of his counting-room by laying down a square of Brussels. Only those churches devoted to the service of the more aristocratic worshipers are furnished with the comforts of Kidderminister, the bare wood or bricks or stone being considered more consonant with the "self-denying duties of the sanctuary." Widely different is it with the well-to-do American. He believes in enjoying life; and considering that carpets contribute to life's enjoyment, he does not hesitate to spread everywhere he is accustomed to tread with a due quantity of three-ply, or Tapestry, or Brussels, or Turkey. Notwithstanding the high cost of foreign carpetings in this country, it is yet surprising to what an extent these are annually imported. In 1859, more than two million dollars' worth of carpetings was imported into the United States. Of that amount $2,174,064 was for goods of English manufacture, and $10,317 for French makes. Although a larger proportion of expensive carpetings is used in this country than perhaps in any other, yet it would appear that the kind most luxurious of all is sold to a very insignificant extent. The costly manufactures of Turkey are known throughout the world as at once the richest and the most durable of carpets; yet our entire importation of that make, during last year, amounted to only $798, which fact is probably owing to the limited extent of trade with Turkey. The sale of mattings is a branch of the carpet trade which is yearly increasing in importance. The imports of matting in 1859 amounted to $265,133; and this year in consequence of our growing trade with China, the chief source of supply, the receipts are likely to exceed considerably that amount. The imports of floor-cloth are comparatively trifling, our own manufacturer having succeeded in producing an article which has put foreign productions almost entirely out of the market.—*United States Economist.*

OUR SPECIAL CORRESPONDENCE

Sugar Plantations—Mode of Culture—Railroads and Alligators—Galveston—Extensive Drouth and Injury to the Crops—Mule-drivers, &c.

GALVESTON, Texas, May 31, 1860.

MESSRS. EDITORS:—A little before reaching New Orleans I came in sight of the first sugar plantations, and we passed through thousands of acres on the ride from New Orleans, 80 miles due west to Brashear, on the route to Galveston, Texas. The sugar cane in the present stage of its growth is simply a cluster of long sword-shaped leaves, looking very much like a lily. It is planted in rows, from five to seven feet apart, and some of the rows that we passed through were a mile and a half or two miles in length. The mode of planting is to open a furrow, any time in the winter, and lay two or three canes in it and cover them up. The canes for this purpose require to be preserved by protecting them from the cold, which is effected by covering them either with earth or, more commonly, with cane leaves. The plant, after being cut, throws up shoots, the second and third and sometimes even the fourth year, so that it is necessary to replant a fourth, a third, or a half of the plantation each year. The ground must be plowed and hoed sufficiently to keep it clear of weeds till the cane plants get large enough to shade the ground, three plowings being about the average. At about nine o'clock in the forenoon we passed a plantation in which the negroes were just taking out out the mules to water; having been plowing since daylight. There were some twenty of them, and the overseer was sitting on his horse, watching them as they rode off, perhaps a mile, to the well. The plantations are so large that the overseers generally ride, spending most of their time on horseback.

The railroad from New Orleans to Brashear passes through a very level country, a considerable portion of the way being a cypress swamp; and in the ditches by the side of the road we saw scores of young alligators, generally about five or six feet in length. Many of them were lying on the bank of the ditch, sunning themselves—slimy, scaly reptiles, as black as a negro, decidedly unattractive in their appearance. I am told that the female lays from two to three dozen of eggs, each as large as a turkey's egg and twice as long; that she covers them with sticks and leaves them to be hatched by the sun. It is only when disturbed in the neighborhood of her nest that the alligator is really dangerous. My informant says that on such occasions she is very ferocious, and will attack a man without hesitation.

The 180 miles from Brashear to Galveston we passed in the fine steamer *Orizaba* in about 21 hours, making the trip from New York, notwithstanding the 24 hours delay, in some 9 hours less than a week. Galveston is a new-looking place of brick buildings, many of them with beautiful iron fronts; it has a few shade trees in some of the streets. The yellow fever is the great scourge of the place.

There seems to be a general complaint of the drouth all the way from Maine to Texas. The corn, cotton and sugar crops are all suffering, and the latter especially is said to be in danger of failing entirely unless a rain comes soon.

My room-mate is an old Kentuckian who makes a business of buying horses and mules in Kentucky and Missouri and selling them in the southern States. He was quite uneasy on the steamship, as he had never been out of sight of land before. He said he didn't want to go where he couldn't *see timber*. A gentleman in the crowd, with a mole on the end of his nose, observed to him that, if that was the case, he had better take his hat and go ashore, as they would soon shove him into that fix. The weatherbeaten old frontiersman replied that he reckoned he could stand what any other man could. "Yes," said the gentleman, "Kentucky breeds that kind of men." Another rough customer from Alabama remarked that "he didn't know; he thought he couldn't stand being hen-pecked as some men are." "You oughten to say that," says Kentucky, "there was Delilah fooled Sampson, and he was the strongest man that ever was. No man ought to say that he can't be turkey-pecked." "No," responded the man with the mole on his nose, "there is no State that breeds that kind of men." B.

THE VENTILATION OF MINES A NEW INVENTION FOR THE PURPOSE.

MESSRS. EDITORS:—I have carefully perused the communication of your correspondent, R. Allison, of Pottsville, Pa. on the subject of the ventilation of mines (published on page 370, Vol. II, of the SCIENTIFIC AMERICAN); and like him I believe that too much importance has hitherto been attached to warming ventilation. This theory was treated at length by David Boswell Reed, and published in London in 1844, and again in a work by the same author, (who now holds a prominent position in the Smithsonian Institute at Washington) in a book published by Wiley & Halsted in 1858. I think that it may be fairly stated that Mr. Reed has given this system of ventilation all that it is entitled to, and I concur with Mr. Allison in saying that it is full time that, for some of the most important purposes, it may be considered a failure.

When economy—the great *desideratum* for Americans—is taken into consideration, the "jet-of-steam" system will meet with no better fate. Your correspondent mentions a case where a gentleman began with 25 jets of steam, but subsequently increased them to 45. Each one of these jets passed through a nozzle $\frac{1}{8}$ of an inch in diameter, and at a pressure of 75 pounds on the steam gage. In a nozzle of $\frac{1}{8}$ of an inch in diameter and the steam at the above pressure, it may be fairly stated that 710 feet will pass through a nozzle of that size each second, or 42,600 feet per minute. Now multiply this by 45, which is the number of his jets, and you have 1,917,000 feet of steam passing through the aggregate number. When this is viewed from an economical point of view, it may unquestionably be said that this process is too expensive, to say nothing about its being ineffective.

I accidentally saw, some weeks ago, the particulars of an invention of R. W. Sievier, of London, England, which in my judgment is peculiarly adapted to the ventilation of mines, and which will when properly applied prevent any further loss of life to the miner. It consists of a simple exhaust fan working in a drum head, which is attached to a pipe, the whole being air-tight. This fan, when running at a speed of 1,000 revolutions per minute (and two-horse power if properly geared is sufficient to drive it at that speed), will exhaust 300,000 cubical feet of air per hour, through a pipe, shaft or flue, 15 inches in diameter. The construction of the fan is entirely different from any I have seen; and that it is capable of doing what is here stated for it is proved by the fact that one like it is now in operation in Newport, Ky., made by the same author. It is applied to what has heretofore been called a "blast furnace" for the manufacture of iron, and it exhausts a current of air through the furnace as shown by the monometer tube, equal to a blast through the ordinary tweers of 12 pounds to the square inch. If more exhaust is required, you have but to increase the speed of your fan, or if less, diminish the same. INQUIRER.

Jersey City, N. J., June 28, 1860.