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Wednesday,Feb. 23, 1870.

THE GERM THEORY.

PROFESSOR TYNDALL, of London, announces a theory with regard to the causes of epidemic disease, and supports it with the results of scientific experiments, which is likely to overthrow long established ideas and produce a new era in medical treatment. It may be called the germ theory, and holds that the air of large cities is loaded with organic dust, while the country air is not free from it; and this organic dust floats in the atmosphere, and is inhaled into the system, where the germs of life which it contains develop into parasites that rapidly produce disease. This is claimed to be more especially the case with epidemics, and the atmosphere of the apartments where persons suffering from such diseases are confined is particularly vitiated by this organic matter.

It is asserted that the current belief is incorrect, which was held some time ago, that epidemic diseases were "generally propagated by a kind of malaria, which consisted of organic matter in a state of motor-decay, and that when such matter was taken into the body through the lungs or skin, it had the power of spreading there the destroying process which had attacked itself;" a power visibly exerted in the case of yeast, in which a mere speck of matter in this supposed state of decomposition is apparently able to indefinitely propagate its own decay. But discoveries have proved that fermentation is not a process of decay, as supposed, but a product of life. The yeast plant, by these discoveries, is shown to be a living organism, which feeds, grows and reproduces itself, when placed in a proper medium, and thus the process of fermentation is carried on. This makes what are called "ferments," simply "organized beings" which find in the reputed ferments their necessary food. By this discovery it was found that meats could be preserved from putrefaction, by being placed in a high temperature of air and then being hermetically sealed so that ordinary air could not reach them.

Professor Tyndall said that the germ theory of epidemic disease had run side by side with these discoveries and the researches that led to them, and had been strengthened by them. A powerful electric beam causes the air in which dust is suspended to appear as a semi-solid, although in ordinary daylight no such condition would be observable. In the lecture delivered on the subject, at the Royal Institution, London, he said, speaking of the atmospheric condition which the electric beam disclosed.

"Nobody could in the first instance, without repugnance, place the mouth at the illuminated focus of the electric beam and inhale the dirt revealed there, nor is the disgust abolished by the reflection that, although we do not see the nastiness, we are churning it in our lungs every hour and minute of our lives. There is no respite to this contact with dirt; and the wonder is, not that we should, from time to time suffer from its presence, but that so small a portion of it would appear to be deadly to man."

And this portion is declared to be the active organic matter with which the dust of the air is impregnated, and which taken into the system produces epidemic diseases. On this theory, if it be true, infection is not caused so much by inhaling an atmosphere loaded with noxious and poisonous gases, as by breathing that in which these organisms, of the kind peculiar to the disease, are found in great numbers; and in the custom of a physician, in applying a silk handkerchief to the nose on entering a room where infectious disease is, he does, by habit, the very best thing that could be done to avoid being taken with the contagion. Yet a cotton respirator is better than a silk one, and the air filtered through it is purer and freer from all or-

ganic matter. Professor Tyndall's description of this filtering process and the results obtained in experiments on it is so good that we cannot do better than produce it:

"But by far the most interesting and important illustration of this filtering process is furnished by the human breath. I fill my lungs with ordinary air and breathe through a glass tube across the electric beam. The condensation of the aqueous vapor of the breath is shown by the formation of a luminous white cloud of delicate texture. It is necessary to abolish this cloud, and this may be done by drying the breath previous to its entering the beam, or, still more simply, by warming the glass tube. When this is done the luminous track of the beam is for a time uninterrupted. The breath impresses upon the floating matter a transverse motion, but the dust from the lungs makes good the particles displaced. But after some time an obscure disk appears upon the beam, the darkness of which increases, until finally, towards the end of the expiration the beam is as it were, pierced by an intensely black hole, in which no particles whatever can be discerned. The air, in fact, has so lodged its dirt within the lungs as to render the last portions of the expired breath absolutely free from suspended matter. This experiment may be repeated any number of times with the same result. It renders the distribution of the dust within the lungs as manifest as if the chest was transparent. I now empty my lungs as perfectly as possible, and placing a handful of cotton wool against my mouth and nostrils, inhale through it. There is no difficulty in thus filling the lungs with air. On expiring this air through the glass tube its freedom from floating matter is at once manifest. From the very beginning of the act of expiration the beam is pierced by a black aperture. The first puff from the lungs abolishes the illuminated dust and puts a patch of darkness in its place, and the darkness continues throughout the entire course of the expiration."

The subject is one which cannot fail to command the attention of scientific men, and may be found to have close connection with the diseases that prevail here sometimes late in summer, when the atmosphere is more likely to be charged with this organic matter, which would make itself manifest quicker in the tender constitutions of children than in those of adults.

CLEANSING "FROM ALL SIN."

THE Washington correspondence of the Sacramento Union, under date Feb. 12, has the following:

"While, perhaps, not one representative could be found to advocate Mormonism and its accompanying sins, there seems to be wide divergence of views as to the best practicable plan of ridding the nation of this foul blot. Quite a large number of Congressmen believe that if Cullom's bill is enacted it will need an army at its back to enforce its provisions; that it will create a small-sized civil war; that blood will flow; that to reduce the Mormons to subjection, many valuable lives will be lost and many millions of dollars will be squandered. They say that such a measure, in many aspects, is very impolitic and inexpedient, and that, with the railroads and rapid settlement of the Utah basin, the Mormon question will, in the course of a few years, answer itself. Others seem to count such an enactment unconstitutional, but their argument possesses elements of weakness. Others, again, fear that what they term its proscriptiveness, and the immediate results consequent upon its enforcement, will ultimately swell the ranks of Mormonism. Let it alone, they say, as do the others. New blood is pouring in from all sides, which will cleanse it from all sin. Fitch of Nevada—the State which adjoins, and was formerly a part of the Mormon Territory—intends to oppose the bill on some such grounds as I have mentioned, and you may be sure he will not lack support, particularly in the present economical mood of the House. It is difficult at present to forecast the fate of this bill in Congress."

Passing over the cant phrase of "foul blot," we cannot but stop to admire the sentence "New blood is pouring in from all sides, which will cleanse it from all sin!" "Cleanse!" Heaven save the mark! Such a cleansing process as this new blood makes wherever it gets a chance! Murders, robberies, gambling-hells, prostitution of the most undisguised and outrageous character, everything, in fact, at which pure-minded men and women shudder and from which they turn away with loathing, while mourning to think that humanity could become so debased and brutalized; this is the record of the element which is to cleanse Utah "from all sin." No; we had rather not be so "cleansed." If this is the "Christianity" that is to "regenerate" Utah; if this is the "civilization" that is to bring us level with the age, we prefer the honesty, purity, temperance and virtue which we profess, even at the continued risk of being

still stigmatized as barbarian and heathen.

For a sample of cleansing this "new blood" accomplishes *vide* Promontory as it was and railroad towns generally along the lines of the P. R. R.

THEIRISH LAND BILL.

There seems to be a breathing spell just now in political agitation in Britain; and the Irish questions are more calmly discussed. Though there is every once in a while rumors of movements among the Fenians in New York and other places East, intimating intentions of another raid on the Dominion of Canada, there appears little grounds for believing that anything serious will come of them. The position taken by the Government at Washington on the neutrality question, as manifested in the course pursued with regard to Cuba, gives scant hope for any Fenian demonstration that might be made against Canada. With the power of the Republic threatening them for a breach of the neutrality laws in the rear, and the royal forces in Canada waiting to receive them in front, should they succeed in crossing the boundary, there is little for the Fenians to do at present but indulge in speech-making and wordy threatenings of intended invasion. Newspaper sensationalists must find something to satisfy the cravings of a public appetite they have largely helped to create; and it is probable that when the present excitement concerning Utah measurably dies away, the Fenian question may again loom up as one of some importance, unless something of greater interest should supersede it.

In the meantime the causes of dissatisfaction among the people of Ireland are being steadily removed. The Church disestablishment bill was the first great measure of reform; but the one now before the British Parliament, in the form of the Irish land bill, is of infinitely greater importance. The condition of the farming population in Ireland has been for ages most unenviable. They have been so completely at the mercy of the landowners that to all intents and purposes they have been slaves. They might toil and labor, make improvements and increase the value of the property on which their industry was employed, but the fruits of their labors became the property of the owners of the soil, who could, under circumstances which were very general, turn them out of doors at a minute's warning. So often has this been done, and so heartless and cruel has been the manner of doing it, that Irish "evictions" have become a synonym for rapacious cruelty. The aged, decrepid and poverty-stricken have often been turned out of their homes in the most inclement weather, to watch the demolition of the buildings in which probably generations of their ancestors had been born and raised. And this in accordance with law; for the statutes declared that the soil was the property of the landowner; and if any improvements were put upon it by the occupant, unless he had an express agreement with the landowner to be paid for them, he had no claim nor title to them. So absurdly and unjustly stringent was and is this law in Ireland, that we venture to question whether a lock could to-day be found on the door of any house leased by a tenant on the island, fastened on with more than three screw nails, for the putting in of a fourth would give the lock the character of permanency, and it would then be the property of the owner of the house, under which circumstance the tenant who put it on dare not remove it.

The provisions of the present Irish land bill have not been definitely stated on this side of the Atlantic, so far as we have seen, but enough has been published to show that by it the right of the tenant-farmer to his improvements will be secured. This has been the general custom in the Province of Ulster, in the north of Ireland, for some years, induced to a great extent, in many instances, by the hot agitation of the question about thirty years ago, when the landholders deemed it politic to extend this simple act of justice to their tenantry that the spread of disaffection and sedition, which were rapidly gaining ground, might be checked. In some parts of Ulster, such as county Londonderry where the land is owned by certain London companies, tenant-right was granted in a half-hearted, churlish manner, that gave the tenant plainly

to understand it was a gift which could be withheld at any time.

The power placed in the hands of and owners and their agents or middlemen, by this absolute control over the soil and its cultivators, was immense. Their tenants were virtually serfs, bound by the fear of pauperism and starvation to do their bidding, especially at elections, and it was only in cities or among free-holders and tenants with long leases, that opposition to their nominees, could be found.

The passage of the land bill will have a greater influence in revolutionizing Ireland than any measure that has been made law by the British Parliament since the emancipation act, which gave political rights to the Roman Catholic population.

PEACEFUL AGENCIES.

WE notice that the respectable portion of the Eastern press is opposed to a war against "Mormonism," on the ground that peaceful influences have not been exhausted. That war should be thought of and urged against a people, merely because they claim to exercise the constitutional and God-given right of worshipping according to the dictates of their own consciences without interfering with the rights of others, ought to be matter for astonishment to all right-thinking, reflecting minds. Yet such a policy is strongly urged by a horde of speculators, who desire to secure wealth out of contracts, and from the plunder and spoliation of an innocent community; and they are not without warm and interested adherents among prominent politicians, urged on by the advocates of a system of priestcraft that exercises powerful political sway while its spiritual influence is fast waning. This latter class, envious of the prosperity of the Latter-day Saints—the result of their industry under the blessings of the Almighty—and greedily anxious to possess our property, eagerly preaches a crusade against the people of Utah, in the shape of a war of extermination. To obtain the pleasant homes which toil, hard-labor and frugality have reared in this Territory, they would drench every hearth with the life-blood of its owners, if they could, and destroy the last vestige of a community that has justly become the wonderment of the age for the works accomplished under most trying and peculiar circumstances.

But there is a large and thoughtful portion of the nation that does not see the wisdom or expediency of such sanguinary measures. Still, we regret to note that even with many of that portion the question of economy has greater force than sound justice. Yet we are willing to give them all due credit for their moderation. One leading Eastern paper says: "Surely, the time for war has not yet come. We have yet to give peaceful, civilizing influences a fair chance." We are eminently a peace-loving people. Peace, order, law and sobriety reign through our cities and settlements. We aim at the highest form of civilization and refinement; not those spurious kinds which seek solely the increase of intellectual activity, while virtually laboring to destroy it by physical debasement and corruption. We desire to see generations coming upon the earth possessing sound minds in vigorous, healthy bodies. We desire to see those minds developed and cultivated, their increasing capacity supplied with the purest and best knowledge with elevating truth. We desire to see these bodies preserved far beyond the present span of life, endowed with increased vitality, having vigorous constitutions that will enable the minds which animate them to retain their full powers for a much longer period than is now the rule, and thus bless coming generations with a matured wisdom enlightened by an experience gained in well spent lives. We wish to see the evils which afflict the body-social removed or remedied; to see the sins which cast a blight on the age left behind in the march to the eternal exaltation of the race. We wish to see all men and women possessing the full measure of the liberty and freedom which they were formed to enjoy, and with dispositions to use and not abuse them, to nobly and honorably restrain their desires within due bounds and not seek a condition of license under the name of liberty. We wish to see the people happy under the wise government of leaders of their own choice, and the rulers willing to resign place and honors, should the public welfare require it. We desire to see every man and woman filling the