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THE PANIC AND THE LABORING CLASSES.

The daily journals of the past week have exhibited such crowded columns of reports from all parts of the country, indicating the temporarily depressed condition of the manufacturing and industrial interests, that it is hardly necessary here to particularize individual cases as evidence of the prevailing despondent feeling. By far the majority of establishments are retrenching: some by reduction of working force, others by cutting down hours, and more by removing a percentage from the salaries of employees. While the outlook is far from cheerful, there is a belief that the worst is over. The railroads and many of the iron foundries still take a gloomy view of affairs, and we notice that reductions of expense are yet being largely made.

With all the facts in view, however, we still are inclined to adhere to our belief in the passing nature of the trouble. We find much to applaud in the course adopted by many establishments, which, trusting to the early revival of better times, are working straight on, with no greater alteration in their business routine than such as they are imperatively driven to make. So far as the producers of the necessities of existence are concerned, we think little apprehension need be felt as to their rising superior to the disaster; but with reference to those who gain their living from the manufacture or sale of articles pertaining to the luxuries of life, there is a probability of less favorable results.

To the workmen, however, the prospect is indeed dark. No pay on Saturday night means, to hundreds, no dinner on Sunday—no rent for the coming week—no fuel to keep off the bitter cold of winter. In ordinary times, these men might seek other employment, or turn to some labor, the return for which would keep body and soul together; but now, when thirty thousand operatives in this city alone have been thrust from employment, the chances of gaining comfortable support for a family are far from promising. Let employers put themselves in the places of their hands, and imagine their own feelings in so dire a strait, and then think of the hardships which, perhaps through a mere sentiment of over cautiousness, they entail, not only upon their immediate workmen, but upon their families and the host of other people dependent upon their small custom for a means of existence. It is for this reason, above all others, that we advocate the keeping open of every industrial establishment while its bare expenses can be met, no matter if not a cent of profit be made, or even if some loss accrue. Better far that the rich should sacrifice a portion of their wealth than that the poor should be left destitute or driven to pauperism.

Another lesson, and a fruitful one, is to be gleaned from the pending crisis, which the workmen would do well to take to heart. It is the utter futility and hollowness of strikes, and notably that of a year ago, when regarded in connection with the present aspect of affairs. It is strange that hardly twelve months should elapse before the very condition to which a number of wrongheaded men strove to reduce the employers, through coercion and an unjust exercise of power over the ignorant, should be brought home to their own doors. The defeat of the great movement of 1872 was complete enough, but it has been reserved for the panic of 1873 to give it double effect and to render its teachings indelibly impressed.

As to the means of alleviating the condition of those who, it now appears, are to be so sadly reduced during the coming winter, some organized plan will undoubtedly become necessary. A contemporary suggests the division of large cities into districts, and the appointment of suitable committees to visit the houses in each, in order to solicit contributions to a general fund. Our opinion is that now is the time for the trades' unions to assert themselves, and to prove that they are unworthy of the odium under which they now labor. Several of these organizations, during the great strike,

boasted freely of their reserve capital and of the assistance to be gained from kindred societies in Europe. Now let the International and the British associations, which send such earnest emissaries here, come forward and render that aid which they have so freely promised. If the trade associations will join forces, and labor, not merely in the interest of their own members but of all working men, they will do more towards elevating the condition of the laboring classes than they could accomplish by any number of successful strikes.

THE PROGRESS OF THE HELL GATE EXCAVATIONS.

General Newton, of the United States engineers, the officer in charge of the government works at Hell Gate, has recently submitted his annual report of progress made in that important undertaking. The various tunnels and galleries now aggregate in length 5,884 feet, of which 2,731 feet constitutes the advance of the past year. The total amount of stone removed during this period is 9,554 cubic yards, of which 7,619 yards were extracted by the Burleigh drill, 185 by the Diamond, and the balance by hand work. About ten linear feet of holes have been made in each cubic yard of rock; and to explode this large number of blasts, 11,808 pounds of nitro-glycerin, 1,218 pounds of giant powder, and 3,445 pounds of black powder have been employed. In hammer work, 9 03 feet of hole and 0 9 pounds of nitro-glycerin correspond to one cubic yard of rock blasted.

The report speaks very favorably of the operation of the Burleigh drill, each machine, it is stated, having made for the year an average of 25 feet per shift of eight hours. The loss of steel by abrasion and drilling is estimated at 0 54 ounces per linear foot, a calculation which of course must be confined to rock of similar nature to that at Hallett's Point. The balance of the report refers more particularly to the operations of the steam drilling scow during the year 1872, reference to which has already been made in these columns. There is the usual complaint of delay and increased cost of operations, owing to the lack of necessary funds. It is strange that Congress is so apathetic in this regard. The importance of securing a free channel from Long Island Sound to the East River has been so frequently and so forcibly urged, and so much money has already been expended in fruitlessly endeavoring to secure the same, that there can be no reason for withholding the means of completing a work regarding the ultimate success of which no doubt can be entertained. Delay, as General Newton has so often pointed out, only increases expenses, and besides indefinitely defers the advantages to be gained by both city and country. We were told during last winter that at that period a sum in the neighborhood of five or six hundred thousand dollars would be sufficient for all purposes. It seems to us that both our city and state authorities should, during the coming session of Congress, especially interest themselves in this matter, and, by the exercise of their powerful influence, ensure the appropriation of the balance now needed to effect the speedy completion of operations.

A RECENT IMPROVEMENT IN GAS MAKING.

On another page of this issue will be found an illustrated description of an improved plan of gas manufacture, which has recently been put in practice at the works of the Citizens' Gas Company in Brooklyn, N. Y. It is a matter of general information that the forcing of jets of superheated steam through anthracite coal, over heated metal, or through a furnace fire, is not a new idea, nor is it our intention in the present instance so to infer. Some sixty patents or more have been granted for "water gas" and kindred processes, dating as far back as 1823. The system in general has found many opponents, notably, among others, the late Dr. Torrey; while Professor Wurtz, in published reports on the subject, has pointed out that it is impossible to convert the steam entirely into hydrogen and carbonic oxide. Some of the steam, he considers, is not decomposed, and, passing into the coal retorts, operates injuriously, probably by oxidizing the olefiant gas. In conclusion, the same author remarks that the greatest of practical objections is "the uncertainty of the quality of the product."

Without entering further into the details of the subject or inviting discussion of the vexed question in the present connection, we submit simply a statement of facts as laid before us through the courtesy of the President of the above named company, W. P. Libby, Esq. Whether gas experts may or may not hold that the operation and apparatus we have described are economical, remunerative, or of any advantage whatever, is not the point upon which we wish to dwell. The books of the company, we are told, indicate no inconsiderable saving, while the aspect of the works, the absence of the usual complement of hands, the diminished requirement of coal, and finally the satisfaction expressed by the officials employing this threefold process, add still further testimony in corroboration of its apparent value and utility.

POSTAL SCIENCE.

It seems to us that the postal regulations now in force are singularly inconvenient, not to say unjust, as regards publishers, who, in the ordinary course of their business, find it necessary to transmit large quantities of printed matter through the mails. We have already called attention to the fact that we are now preparing a special edition of sixty thousand copies of the SCIENTIFIC AMERICAN, numbers of which will be mailed to persons in every city, town and village in the United States. As the recipients of these papers will in all cases be non subscribers, the postage thereon must be paid in stamps previous to mailing; so that, at the rate of two cents per copy, the aggregate expenditure for this item alone will reach the sum of twelve hundred dollars.

Now sixty thousand papers would supply 1,154 subscribers with one copy each per week for one year. But each person, paying at his own post office, would be charged only five cents per quarter postage, or twenty cents for the entire period. Consequently, the 1,154 people would together aggregate the sum of about \$231, or a very little over one sixth of the amount which we pay in advance in order to send all the numbers at once. If, as it is urged, the low rate of postage to subscribers has for its only end the facilitating of the dissemination of news and useful knowledge, then why is it not equally fair to further the same object by giving those who produce the means of imparting such information similar advantages? Why should we, in the present instance, be required to hand out one dollar and four cents for sending fifty-two copies of our special edition at once, when if we forward the same number of issues of our regular publication, weekly for a year, our subscriber would be taxed only twenty cents?

Again, is it not possible to simplify the mode of sending such masses of matter, to the interest of both government and publishers? We are now obliged to purchase sixty thousand stamps—three hundred sheets—and go to the labor of pasting them on the wrappers, after which each stamp of course has to be cancelled in its passage through the mails. It seems that it would be a much easier proceeding for the Post Office to detail one employee to weigh the entire issue, note the result, and thence calculate the charge at regular rates. This sum determined, we could pay it at once, the papers would be despatched, and the proof of prepayment might simply be a hand print of "New York—paid," or something of similar kind, applied by the same people and in the same manner as they would obliterate the ordinary postage stamp. The government would thus gain the cost of manufacturing the sixty thousand two cent stamps, while we should be spared the trouble of affixing them.

In England, the sender is not obliged to stamp his matter if the postage thereon equals or exceeds one pound sterling. If, for example, he has two hundred and forty letters to forward, at the rate of a penny each, the office weighs them and receives the cash, stamping them paid in the manner above noted. Or, in other cases, if it be so desired, the post office will emboss stamps upon wrappers or envelopes of any size, upon any variety of white paper, without any charge other than the face value of the imprint. These plans might well be put in practice here, and it seems might prove of no small convenience. For the English newspapers even a better arrangement is in existence. Formerly there was a revenue tax on every journal, which covered its transmission, free through the mail, for any number of times up to a certain date from that of its publication. London papers were sent from the publishing offices to those of the Internal Revenue, at Somerset House, where the proper stamps were affixed; after which no further payments were required. Now, however, the income goes directly to the post office; but instead of obliging journals, like the London Times, for instance, the circulation of which outside of the capital is very large, to buy and attach innumerable penny stamps, an electrotype of the government imprint is locked up and struck off in the press room to count the sheets printed, and the proprietors pay the tax called for by his report.

The efforts toward postal reform, which have been for so long advocated by both press and people, were well inaugurated by our last Congress in the abolition of the franking abuse, the establishment of charges upon exchange newspapers, and the authorization of the postal cards. It remains for the coming legislature to continue the work by reducing the postage on all letters, sent within the United States, to the uniform rate of one cent; while, at the same time, we trust that the discrepancies which we have pointed out in relation to newspaper charges may be fairly adjusted. The question of increasing the facilities for transmission, by means similar to those referred to above, is within the authority of the Post Office Department, and merits its careful consideration.

ON THE MOLECULAR CHANGES PRODUCED BY VARIATIONS OF TEMPERATURE.

Professor R. H. Thurston, of the Stevens Institute, has prepared a very interesting paper on this subject, in which is presented, in brief form, a history of the various practical experiments and the conclusions reached by different observers on the above subject. He states that the most complete investigation ever made, particularly to determine the effect of changes of temperature in modifying the physical properties of iron and steel, was that of Knut Styffe, the director of the Royal Technological Institute at Stockholm, Sweden, and supplemented by the experiments of Christer P. Sandberg, who translated the report of Styffe into English.

The work of the first named engineer was done at the instance of a committee appointed by the King of Sweden. It was commenced by Professor Angstrom, continued by Herr R. Thalen, of the University of Upsala, and by Engineer K. Cronstrand, and it was finally concluded, with the assistance of Cronstrand and Lindell, by Styffe, who wrote out the results of the whole investigation and made the report public.

These labors were begun in 1863, and extended over several years.

The conclusions of Styffe were:

"(1). That the absolute strength of iron and steel is not diminished by cold, but that, even at the lowest temperature which ever occurs in Sweden, it is at least as great as at ordinary temperature (about 60° Fah.)."

"(2). That, at temperatures between 212° and 392° Fah., the absolute strength of steel is nearly the same as at ordinary temperature; but in soft iron, is always greater."

"(3). That neither in steel nor in iron is the extensibility less in severe cold than at ordinary temperature, but that, from 266° to 320° Fah., it is generally diminished, not to any great extent in steel, but considerably in iron."

"(4). That the limit of elasticity, in both steel and iron, lies higher in severe cold; but that at about 284° Fah., it is lower, at least in iron, than at ordinary temperatures."

"(5). That the modulus of elasticity in both steel and iron is increased on reduction of temperature, and diminished on elevation of temperature; but that these variations never exceed 0.05 per cent for a change of temperature of 1.8° Fah. and, therefore, that such variations, at least for ordinary purposes, are of no special importance."

The experimenter gives it as his opinion that the cause of the frequent breakage of rails in cold weather, and of articles made of iron and steel, is unequal expansion and contraction and the rigidity of supports, where, as is the case with rails, frost may very greatly affect them.

Sandberg's conclusions, from 20 experiments, are thus given:

"(1). That, for such iron as is usually employed for rails in the three principal rail-making countries (Wales, France, and Belgium), the breaking strain, as tested by sudden blows or shocks, is considerably influenced by cold; such iron exhibiting, at 10° Fah., only from one third to one fourth of the strength which it possesses at 84° Fah."

"(2). That the ductility and flexibility of such iron is also much affected by cold: rails broken at 10° Fah., showing, on an average, a permanent deflection of less than one inch, while the other halves of the same rails, broken at 84° Fah., showed a set of more than four inches before fracture."

"(3). That, at summer heat, the strength of the Aberdare rails was 20 per cent greater than that of the Creusot rails; but that, in winter, the latter were 20 per cent stronger than the former."

Sandberg suggests that this considerable decrease of toughness at low temperatures may be due to the "cold-shortness" produced by the presence of phosphorus. Our knowledge on this point must remain imperfect until similar experiments have been made with iron free from phosphorus.

The practical result of the whole investigation is that iron and copper, and probably other metals, do not lose their power of sustaining "dead" loads at low temperatures, but that they do lose, to a very serious extent, their power of sustaining shocks or resisting sharp blows; and that the factor of safety in structures need not be increased in the former case, where exposure to severe cold is apprehended; but that machinery, rails, and other constructions which are to resist shocks, should have large factors of safety and should be most carefully protected, if possible, from extremes of temperature.

MEDICAL SCIENCE IN COURT.

Nearly two years ago James Fisk, a managing director of the Erie railway and a prominent man in various steamboat and other enterprises, well known, doubtless, by fame to many of our readers, was shot by the hand of an assassin. The scene of the tragedy was at the Grand Central Hotel, on Broadway, in this city. Fisk had just entered the premises, and was in the act of ascending the stairway of the ladies' entrance, when he was shot by a person standing on the landing above. The ball entered his abdomen just above the navel and passed obliquely downward through the intestines, lodging in the muscles of the thigh. Another ball made flesh wounds in the arm. The assassin was Edward S. Stokes, who was almost immediately arrested and lodged in jail, while the wounded man at once received medical attendance in the hotel, where, after lingering until the following day, he died.

Stokes has had three trials. On the first, the jury failed to agree. On the second, he was found guilty and sentenced to death. But the Court of Appeals, in consequence of certain informalities in the proceedings, ordered a new trial. This third trial has just been finished, resulting in the finding of the prisoner guilty of manslaughter in the third degree. The highest punishment of the law, four years in the State prison, was immediately pronounced, and thus has terminated one of the most remarkable cases in criminal jurisprudence.

To the superficial observer, the result of the trial seems strange enough. Here was a man ruthlessly shot down in broad daylight, and the shooting clearly brought home to the accused; yet he escapes with a comparatively slight punishment. It is even stated, on good authority, that nine of the jurors were in favor of an absolute acquittal, and consented, with great reluctance, to the verdict given. The questions naturally arise: What basis had these jurors for such a verdict, and why, if Stokes shot Fisk, was he not found guilty of murder?

The defences were: 1. That Fisk had threatened to shoot Stokes, that on this meeting he drew his pistol, when Stokes discharged his revolver in self defence. 2. That the previous threats of Fisk had affected the mind of Stokes, and that at the moment of the shooting he was insane. 3. That Stokes did not shoot with intent to kill. 4. That the death of Fisk did not result from the shooting, but from poisoning by malpractice of the doctors after the shooting. It is to the evidence pertaining to this last theory of the defence that we wish to direct attention, for it involves the testimony of some of our most distinguished physicians, acting in the capacity of scientific experts.

From this evidence, it appears that Fisk was attended by seven doctors and surgeons, all prominent men in this community, namely, Drs. Carnochan, Tripler, Steele, White, Sayre, Fisher and Wood. In the multitude of counsel, there is generally supposed to be wisdom; but it seems to have

proved otherwise in this case. Dr. Tripler began operations by deeply probing the distressing wound, an injudicious proceeding, according to some of the medical experts. Subsequently Dr. Fisher, Dr. Wood and Dr. White each used the probe. Several glasses of brandy and water were administered, also chloroform and morphine. The latter was administered by the mouth, and by subcutaneous injection, six times within four hours.

Dr. Wood testified that he told Drs. Fisher and Tripler, who were the choice of Mr. Fisk as attendants, that they had two lives on their hands, Fisk's and Stokes', and must administer the opium with their fingers on the pulse and watch carefully the condition of Fisk's pupil and of his intelligence. He ascribed Fisk's death to shock, but admitted that the latter symptoms, such as stertorous breathing, were symptoms of opium poisoning. He had heard of many cases of recovery from serious wounds in the intestines; he had seen, in cases of hernia, a portion of the intestines slough away and the patient recover; he did not, in the light of authenticated cases, consider Fisk's wound necessarily fatal.

Dr. John M. Carnochan, the distinguished surgeon, reached Fisk's bedside some seven or eight hours after the shooting. He did not think, when he saw Mr. Fisk, that he exhibited the symptoms of shock; he had reacted; he thought the giving of two and a half grains of morphia—thirty drops—hypodermically was a most dangerous way of using opium; it was, he believed, at least the cause of his premature death, that is, that it hastened his death. He thought Fisk could not intelligently have made his will, if he was laboring under shock. He related cases, that he had known, of penetration of the bowels which had not proved fatal. On cross examination, Dr. Carnochan said that he found Fisk, when he reached him, in an unnaturally somnolent condition; the wound did not kill him, the morphia did; there was a possibility that the wound had something to do with it, but he had none of the usual symptoms immediately following injury from a gunshot wound; there was nothing to indicate that he was suffering in any manner from the wound; it was a very dangerous wound, but not necessarily a fatal one. Q. You would expect him to get well? A. Of course I would.

Dr. Gurdon Buck testified that the wound was alone sufficient to account for death, and that the use of opium he regarded as a proper treatment; but some of the symptoms agreed with those of opium poisoning.

Dr. A. B. Crosby testified that he would consider such a wound fatal.

Dr. Thompson, professor at the university, explained that death from shock arose from enfeeblement of the heart, while death from narcotism arose from coma or from the head. Probing, in abdominal wounds, while the shock lasted, he thought should rarely be resorted to. Chloroform was contra-indicated by shock. It should not be used while shock lasted. He thought he had seen death result from the administering of twenty drops of chloroform. He described at length the symptoms of opium poisoning, which ends in coma, and declared that, in death by shock, though there might be insensibility, that was different from coma. Snoring was utterly inconsistent with shock. Deep breathing was the clear mark of recovery from shock. He declared that the symptoms described indicated that Mr. Fisk had recovered from shock. He thought the length of time excluded entirely the idea of death from peritonitis, and the only conclusion was that he died from an overdose of morphia.

Dr. Macready was examined as an expert on the effect of the wound, and the effect of the morphia administered. He was inclined to think, from their describing the doses by drops, that one half more had been given than was supposed, as ten drops would be fifteen minims. The administering of morphia hypodermically nearly doubled its power. He was strongly of opinion, from the description of the case, that Fisk did not die from shock or peritonitis. There was not enough peritonitis to produce death, and the development of the symptoms were not those of shock. The symptoms were those of inflammation of the brain or uræmic or narcotic poisoning. There being no disease of the brain or kidneys, he ascribed the death to an excess of narcotics.

Dr. Marsh, deputy coroner, testified that he made the *post mortem* examination. In his opinion the death of Fisk was due to shock and peritonitis. But the latter was not sufficient of itself to have caused death. As to narcotism, he did not make any examination. Subcutaneously administered, one twenty-third part of a grain of morphia had been fatal. Taken in the stomach, two grains had been fatal. As to wounds in the abdomen, in the Crimean war ten per cent of those wounded had recovered; in the recent rebellion war, twenty-five per cent had recovered.

Judge Davis, in submitting the case to the jury, made an elaborate and excellent charge. He solemnly warned them against allowing themselves to be influenced by any feelings of prejudice either for or against the prisoner. They must be wholly governed by the evidence before them. In reference to that branch of the defence here under consideration, the Judge was very clear and explicit. "If morphia, improperly administered, either as to the manner or as to the quantity, caused the death of James Fisk, Jr., on the 7th of January, 1872, not as an accelerating cause, but an independent cause, being in itself the sole agent producing death at that time, then the prisoner is not chargeable with the death, because another and an independent agent produced that result, in which his act—the wound he caused—did not occur."

* * I charge you, as the law on this subject, that if you come to the conclusion that the medicines administered were the sole cause of death, and at the same time that the prisoner intended to kill, that he fired the fatal shot with intent to kill, and inflicted a wound with that design, then it is your

duty to convict him of an attempt to commit murder in the first degree." In view of this charge, and the medical evidence, it would seem as if the jury had reason for giving the verdict they did, independent of the other points of the defence, which were well sustained.

THE GOVERNMENT BOILER TESTS.

We have already announced the appropriation by the Government of \$100,000 to be expended in an extensive and exhaustive series of boiler trials at Sandy Hook and at Pittsburgh. Although it was intended to conduct these tests during the past months of September and October, it has been found that the extent of the necessary preparation has caused an unavoidable delay, existing up to the present time. Now, however, it seems that the experiments will be begun at once, and some 20 workmen are engaged at Sandy Hook setting up the ten boilers to be employed. The latter are of the best material and construction, and will be placed in the position in which they are usually located upon steamers. The bomb proof shelter is to be built at a distance of 260 feet from the boilers. Suitable pyrometers, thermometers, and other necessary instruments will be supplied, and self-regulating gages are to be buried in the earth near the boilers.

The Government Commission consists of the following gentlemen: Supervising Inspector Addison Low and C. W. Copeland, of New York, J. H. Robinson, of Boston, Supervising Inspector John Menshaw, of Baltimore, J. V. Holmes, of Ohio, Benjamin Crawford and Supervising Inspector John S. Devinney, of Pittsburgh. The experiments will be mainly to determine the truth or fallacy of the various theories as to the causes and conditions of boiler explosions, which theories are briefly:

First: Explosions caused by the gradual increase of steam pressure.

Second: Those caused by low water and overheating of the plates of the boiler.

Third: Those caused by deposit of sediment, or incrustation on the inner surface exposed to the fire.

Fourth: Those caused by the generation of explosive gases within the boiler.

Fifth: Those caused by electrical action.

Sixth: Those caused by the percussive action of the water in case of rupture of boiler in the steam chamber—Clark & Colburn theory.

Seventh: Those caused by the water being deprived of its air.

Eighth: Those caused by the spheroidal condition of the water.

Ninth: Those caused by the repulsion of the water from the fire surface or plates.

The Sandy Hook trials will extend over several days, and the results will be duly noted on these columns. The Pittsburgh tests will begin on November 12; and on their completion the Commission will return to Sandy Hook, with a view of experimenting upon various safety valves.

SCIENTIFIC AND PRACTICAL INFORMATION.

SPIRITUALISM NOT PATENTABLE.

Spiritualism fails to meet with official recognition in the Patent Office of the United States. "Psychic stand" was the name of the device on which a Massachusetts inventor wanted a patent, because, as he stated, it would spell out words and sentences known as spiritual communications "through an alphabet not only invisible to the operator, but the very location of which he cannot know." "Moreover," he added, "the mode of its operation precludes all possibility of trick or imposture." The obdurate examiner, however, not only refused to perceive the peculiar merits of this useful invention, but gave, as an opinion, that spiritual manifestations are "largely mixed with ignorance, deception, and fraud." The Office, it is stated, offered to issue letters patent on the contrivance as a game table, thereby adding insult to injury on the exasperated inventor, who, shaking the dust of the capital from his feet, departed in a state of indignation bordering on absolute ferocity. The alleged offer of the Patent Office to issue the patent for a game table seems to us quite improbable.

THAT EASTERLY CURRENT.

An attempt was recently made at San Francisco to find the easterly current, and by its aid to reach New York by balloon in a few hours' time. The machine took a fine start, having on board three passengers, who, instead of finding the breeze they wanted, struck a westerly current and came down in the Pacific ocean, happily near the shore. The balloonists were received by boats and had a narrow escape.

Donaldson made another ascension a few days ago from Newark, N. J. He found the easterly current, which took him over the cities of New York and Brooklyn, landing him near Roslyn, L. I. In attempting to reach the earth, the car was swept violently against a stone wall, and the aeronaut was considerably bruised.

PETROLEUM IN BURMAH.

According to the report of Captain Storer, agent for the British Government, there are at present about 150 wells worked at Yegnangyoung, which yield 62,500 barrels of oil a year. At Pagan there are about 50 wells. The oil from these wells is obtained in a more liquid state, and more resembles naphtha. It is of a brackish nature, and is better suited for lighting purposes than the Yegnangyoung oil.

THE back page of the special edition of this paper, to be published about November 15, has been all taken by advertisers; a few more advertisements will be received for the inside pages and Business and Personal column. For terms, see inside. Order immediately.