

[illegible]



DAY, JULY 22.  
Bill—Third reading.  
am Railway (No. 2) Bill,—

III.—(amendments)—Third  
 Horwood Junction Railway.  
 1st reading.  
 Committee on recommitment  
 2d reading.  
 Report of amendment.  
 3d reading.  
 4th reading.

Report of Amendments.  
Second reading.  
Third reading.  
Amendments  
— Third reading.  
Final reading.  
Bill before the House,—  
assembled at Woolwich on  
the cooking apparatus;  
the Quartermaster-General  
of a cooking apparatus at

War whether, after the  
of Captain Grant's cooking  
its superiority over every  
other any or what steps are  
throughout the army.

FRSDAY, JULY 22.

F.  
Committee.  
ment Bill.— Committee.

consolidated Fund (Appropriation) the following proviso:—  
"In consequence of an exigency of His Majesty's Treasury shall be, in addition to the appropriation, every such appropriation estimate to be approved by Parliament is to be made within one month after the date of the presentation of the estimate to Parliament."

"Thames," insert "as well  
"speed," leave out to the  
as may be necessary for  
ainage of the metropolis."  
e out "as far as maybe  
Barking Creek," and insert  
ness Point," and insert

at "from the beginning of  
out "in every year during  
and insert "during the  
period in every."  
Y.  
ing.  
ent Bill,—As amended, to  
—Committee.

Bill,—Committee.  
Amendment Bill,—Com-  
mence Bill,—As amended,  
Bill,—Committee.  
rd reading.  
Abroad, &c., Bill,—Second  
nittee.

ate for the Home Depart-  
paper, that at a recent vis-  
ited in a private provincial  
a man, who is stated to be  
for many years confined.  
be Board of Control what  
on the State of Oude since  
ces and respective claims on  
mission has been announ-

er of Public Works whether at serious decay has taken place, causing the structure to

State for the Home Department the Probate Act Amendment Bill, or either of them, this proceeded.

Secretary of State for Foreign Affairs between Her Majesty's and the subject of the receipt

re insisted on the summary  
they are in possession of any  
type of war to take up such a  
able them to give effectual  
the event of any future dis-

Committee on the Transfer  
Secretary Walpole, Sir James  
rney-General, the Solicitor  
Mr. Serjeant Deasy, Mr.  
orum.

several dioceses in England by clergyman for and on another with the title of the charges are respectively payable all fees and charges on income, incumbency, or perpetual for license of non-residence,

slain and wounded by the  
of the mutiny in 1857, giving  
and the circumstances under  
e; And, similar return as.

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**ET ROBINSON.**

THE TIMES.  
and of Guardians of the

at their weekly meeting, drawn to the reports of the appeared before Sir P. and on Saturday last, and enough to publish the en-Angell, the porter at the

Thursday last, it was  
authorities of the West  
quity into the girl's  
city workhouse, I would  
that workhouse should  
in their conduct in the  
y Mr. Phillips states :—  
Peter Laurie that I would  
th the girl Margaret Robi-

was with a view to dis-  
ad entrapped the girl to  
on, and as I had a much  
on Mr. Phillips, and was  
on should take place, I  
on to was evening both

to my surprise, both the Guardians of the West and the master of that union charged against officers who had had no notice that they were to be called into their conduct. I refused to resist this part of the proceedings, and was directed to attend to hear the charges in reference thereto. I refused to hear any more upon this subject.

gent servant,  
to the Guardians of  
London Union.

he said 'No.' I asked if there were two persons named a woman, and Robinson. I and she said she came had been taken to a large got there she was in they had nothing on but case you'd better tell my said, 'This girl seems to be

ward. Robinson told her after she left the house in the afternoon again on Monday, and he said, 'I and my wife understood that you were a clergyman, and was to see me on this account, and on that account I did not send her into the parsonage.' On Monday morning he sent out to see this clergyman.

and not find the clergyman to believe officer, and he would night. My wife told her she found near Doctor's com-  
mrs. Angell for her kindness,  
I, is to take them into the  
respectable-looking people I keep  
morning. I let the respectable  
work; those in the Casual-  
leaving. The proper time

illustrated."—The Lower illustrations on steel, from descriptions by Henry Form, "The Upper Rhine," of its people, illustrated by a group of people in the possession

g the Rhine; and now that it is making this tour, these beautiful great attention. London, rect.

of England and Wales. 4, illustrated of July 17, as pro- a "Illustrated Times" news- map of England and Wales, eparation, based throughout- ilway and town in the United meet pains have been taken

tion of Mr. Trollope's new  
3 vols., post 8vo. "We can  
like 'Doctor Thorne,'—a laugh-  
ing and cruel, but hearty and  
now-a-days that make us laugh  
and, and as such we commen-  
d the best novel we have yet

of more general interest than it embraces a wide range of reputation should be raised. and Hall, 193, Piccadilly.











THE CAMP AT ALDERSHOTT

The military season at Aldershot seems as if

been well and thoroughly learnt, and some of the regiments might fairly be taken as standard regiments of the kind.

The Queen, accompanied by Princess Alice, Prin

Her Majesty's dinner party included her Royal Highness the Duchess of Kent, his Serene Highness the Prince of Leiningen, Lady Fan by Howard, Sir George Couper, Captain Crispin, R.N.

A meeting of the Council of the Duchy of Cornwall held yesterday at the Lushy-office, Buckingham-gate, James's Park. There were present the Chancellor, Right Hon. Thomas Pemberton Leigh; the Keeper of Privy Seal, Mr. Whitmore; the Attorney-General, Alexander; the Duke of Newcastle; and the Secret Mr. J. R. Gardiner.

A deputation from the Thames Conservancy had an interview with the Chancellor of the Exchequer yesterday at his official residence in Downing-street. The deputation consisted of Mr. J. Thorp, Mr. Alderman Humphrey, Mr. J. Turnley, Mr. T. Dakin, Admiral Austin, Captain Pigott, and Mr. Edward Tyrrell, attended by Captain Burslem, Secretary, and Mr. Stephen Leach, engineer.

The Metropolitan Local Management Act Amendment Bill, had an interview with Lord John Manners yesterday at the Office of Works, Whitehall-place. The deputation consisted of Mr. E. Lister, Secretary of the St. Katherine Docks Improvement Committee; Mr. J. H. Wainwright, Chairman of the St. Botolph Withitham Drainage Board; Mr. Glynnes, vestrj clerk of St. Botolph Withitham Alldgate; and Mr. Tooulin Smith.

A deputation from the Cotton Supply Association arrived in Manchester, consisting of Mr. Henry Ashworth, Mr. V. A. Wigham Wanklyn, and Mr. Joseph Simpson, had an interview with the Chancellor of the Exchequer at his official residence in Downing-street yesterday. The deputation was accompanied by Mr. John Cheetham, M.P., Mr. T. M. C. Gurney, M.P., Mr. Robert Phillips, M.P., and Captain Gurney.

A deputation of Middlesex justices, consisting of Charles Herbert Cottrell and Mr. Pownall, chairman of Quarter Sessions, with Mr. Charles Wright, clerk, transacted business at the Home-office yesterday.

Mr. Thwaites, chairman of the Metropolitan Board of Works, had an interview with the Chancellor of the Exchequer.

Despatches were received yesterday at the Colonial-office from the Governor of Heligoland.

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**A SEASONABLE HINT.**

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**TO THE EDITOR OF THE TIMES.**

Sir,—Allow me to point out, with regard to the statement of Mr. Robinson in his letter "To Families about Travel" in *The Times* of yesterday, that he might have saved a considerable portion of the expense he incurred in baggage by availing himself of the facilities provided for registration and forwarding his baggage from London-bristol station direct to Cologne, there to await his arrival and

examined by the Customs, free of charge. A common practice of travellers intending to stop at intermediate points is to send their baggage forward in this way, taking with them the few articles required on the journey. Small bag, which can be placed under the seat of the railway carriage, and entails no expense either on the railway

for commissioners. The quantity thus carried with passenger would, doubtless, in the case of Mr. Robin have reduced the weight within the limit allowed free the French, Belgian, and Rhenish Railways to passenger who register their baggage. The charge for registration 10d. per package; thus 8s. 4d. only would have been

expense for his passenger's baggage to Cologne, and might, therefore, have saved many of the heavy items enumerated in his bill.

I am, Sir, your obedient servant,  
July 21. C. W. EBORALL, General Manager

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*MID-THAMES*

**TO THE EDITOR OF THE TIMES.**  
Sir,—There is only one insuperable objection to Adn Sartorius's plan for allowing Southampton water to  
into the Thames above London, which is, that water  
not flow up hill.

An Admirer in 1849 proposed to the Metropolitan Commissioners of Sewers that they should drain London main trunk sewer to open into the sea at Beachey Hill. His plan had in its favour the law that fluids flow downhill.

Your's obediently,

July 21. N. I.

**DISTRESSING OCCURRENCE.**—On Tuesday morning early the town of Paisley was the scene of a most distressing occurrence, which has created much excitement in the district. The facts of this case, so far as we can ascertain them, would appear to be these:—About half past 11 o'clock Mr. William Wylie, a gentleman of some 35 years of age, nephew of the late Mr. Wylie, proprietor of the mill for the county, and one of the partners

the firm of Messrs. Rodger, McInnes, and Wylie, called the Infirmary in a very excited state, and in his efforts to obtain admission made a great noise, ringing the bells violently and knocking at the door. Mr. Morrison, house surgeon, disturbed by the noise, came from his room into the dispensary, which adjoins the court, hearing from the voice that it was Mr. Wylie remonstrating with the porter, who had asked permission to enter.

inside, expecting him to go away, as he had previously in similar efforts to obtain admission. While waiting, however, it would appear that three men who were passing the street at the time were also attracted by the noise, which Mr. Wylie was making, and one of them stepped into the courtyard to see what was the cause. What passed between Mr. Wylie and this person is not precisely known, but scarce a minute had elapsed before a piercing cry

heard, and M. Morrison, on opening the dispensary door, was just in time to see Mr. Wylie making off, and a man lying in the courtyard. Mr. Wylie was pursued by the doctor, and also by the man's companions, but he ran so quickly that they could not overtake him. On returning to the yard they proceeded to rouse the man, not dreaming for a moment that he was seriously hurt. This was their astonishment and horror to find, however, that

was dead, an on a light being procured it was found he was stabbed to the heart! The poor fellow never said a word; indeed, it is thought he was dead before he touched. The wound was an inch below the left nipple just over the heart, and was inflicted by a dagger-point clasp-knife, which was afterwards found in the street. The blade was about four inches in length. It would appear that Mr. Welles afterwards proceeded to the

office, when he informed the officer upon duty that he had "done for a fellow who would not again disturb the public peace." A few minutes afterwards Mr. Harrison arrived at the office with Mr. Wylie's hat, which he had left behind him, and Mr. Wylie was placed in confinement. The man who has thus suddenly been deprived of life was a weaver, named Robert Orr.

resided in Sillstreet. He was a quiet, steady, industrious man, 30 years of age, and has left a wife and four young children. Mr. Wylie is connected with a family long known and highly respected in this county, and one universal feeling of commiseration is felt in the community for his untimely death. Although nominally a member of the Baptist church, he never attended much to business, and since the death of an aunt three or four years ago, to whom he

much attached, his mind has been unhinged, and for several months, we learn, he has been an object of considerable anxiety to his friends. After consulting the best medical advice for such cases in Scotland, he was taken to London and was treated for a short time under the advice of Winslow. He recovered so far that the doctor sent him down at the end of June. On Monday he was seen in various parts of the town in a very excited state, as if he had

partaking too freely of liquor. His relations, against whom he was irritated in consequence of the treatment to which they had already subjected him, were advised to let him and his friends in town had no reason to apprehend danger till yesterday, though they must have been satisfied that he was not recovering. We are informed that in the noon, and again in the evening, he was taken home and ad-

to go to bed. His disease apparently was of that nature that sometimes he was calm and rational, but when interfered with he became wild, excited, and passionate. We believe no blame is attributable to any one for this tragic and melancholy affair. We understand Mr. Wylie asserts that the three men were about to garrote him; and it is probable that this was the case. It is a sad and a terrible delusion of this kind, acting upon his diseased mind, leading to the commission of this dreadful act. On Tuesday Mr. W.

GREAT NORTHERN HOSPITAL.—The primary festival to celebrate the institution of this public charity, held yesterday evening at the London Tavern, when 150 gentlemen assembled to testify their interest in its welfare. Mr. Alderman Wiro presided as chairman, and a

his principal supporters was a large and influential section of the medical profession, including Drs. Copland, Rowe, C. Hardinge Lawrance, Messrs. Harvey, Borlase Child, Skeels, &c. others, besides the Revs. Dr. Croly, Theophilus Sauls, Maguire, Mr. Deputy Conder, Sheriff elect, Mr. U. Sheriff Millard, &c. After the chairman had proposed the usual toasts which bespeak the loyalty of every man meeting he concluded Mr. Farquhar Smith, the

meeting he turned upon Mr. Frederick Smith, the non-secretary, to read the report of the committee of managers. The population of the district it appeared amounted to 270,000 persons. The hospital is open night and day to the sick poor, and the only recommendation which they require is the assurance that they stand in need of it. The hon. Society of Gray's-inn, the directors of the Northern Railway, and those of the Imperial Gas Com-

have sign alized their sympathy on its behalf by becoming donors and subscribers to its funds. The donations and subscriptions for the past year—the first year only of its existence—amounted to 1,218*s.* 16*s.* 4*d.*, while the expenditure for the same period has been 2,011*s.* 3*s.* 5*d.*, leaving a deficit upon the hospital of 792*s.* 7*s.* 1*d.* In order to liquidate this charge a general appeal is made to the public, and statistics are given by the report and amply illustrated

the chairman, show the benefits which have already accrued. During the past year there have been 254 in-patients and 57,786 out-patients, which is a number truly indicative of the necessity of further hospital accommodation beyond which the neighbourhood at present supplies. These were greatly enlarged upon by the chairman, and donations and subscriptions to the amount of 400*l.* were collected.

18



## THE ATLANTIC TELEGRAPH EXPEDITION.

(FROM OUR OWN CORRESPONDENT.)

Long before this is laid before your readers the telegraph will have informed them that the expedition has again started to make a third, and positively a last attempt to "put a girdle round about the earth," and make time and distance almost words of no account throughout the civilized world. On a recent occasion I promised to lay before your readers what appeared to me to be the reason of the late failure, and the probabilities that existed in favour of a successful result of the present undertaking. There is no more fitting opportunity for this task than the present time, and when the practical experience of the recent attempts has placed in the most conspicuous light all the material defects of the cable, before doing this, however, it is necessary to refer for a minute to the account of the Agamemnon's cruise—an account written *coram calamo*, and, as your readers will easily believe, under circumstances of peculiar difficulty and discomfort.

In pursuing that narrative I find I have omitted one or two incidents which might have been worth recording, and on one occasion have been led into a nautical error, which made the danger of the Agamemnon appear much less imminent than, in fact, really was. It was stated that, in the height of the great storm on the morning of the 21st of June, when it became imperative necessary that something should be done at once for the safety of the ship, after one or two unsuccessful attempts she was got round on the starboard side. This is not the case. She was not got round on the starboard side at all, but when the attempt was made to wear her fell off into the trough of the sea and became totally unmanageable. In this state she remained for a considerable time, and all the most consummate skill, coolness, and heroic efforts of the officers and crew were vain. For the first time in their lives the officers found their experience was valueless; that the vessel was as helpless as a log upon the water, and that in the most painful significance of the term they lay at the mercy of one of the wildest storms that ever raged in the Atlantic.

Three days after the weather was calm, and Captain Preedy, meeting all the officers and men at, expressed in plain and straightforward terms his sincere acknowledgments of the courage and coolness of all during the arduous time which they had with such difficulty survived. He then, in a few words, explained the cause of the incident was not mentioned sooner; but the bare facts of the cruise spoke enough for themselves as to the conduct of all, and who could have believed that after all that had been dared and done by a young man, who had been attributed to the crew? Your readers, then, may judge of the indignation and disgust of all on board the Agamemnon when, on their arrival at Cork, they learnt that the most injurious statements had been spread abroad from the Niagara regarding the conduct of the crew, and the Agamemnon, the effect of which had been panic-stricken during the storm and that a marine had actually gone mad from sheer terror. Englishmen will know what value to attach to such a statement coming from such a source, yet nevertheless I feel bound, as an impartial witness, solemnly to declare that the crew of the Agamemnon were not only brave, but that they were most cool and calm, and that they were not a foot against English sailors, even by those on board the Niagara.

No more words, however strong, can convey an idea of the fearful nature of that storm, and no expression of praise can do justice to the determined courage and coolness of the crew. All on board the Agamemnon fought it hour by hour and day by day. On the morning of that dreadful 21st of June, when the attempt to wear the ship had failed, and she lay in the trough of the sea, threatening to go down each moment, Captain Preedy, with Mr. Gibson, the first lieutenant, Mr. Moriarty, the master, and Mr. Libby, the second master, remained upon deck, holding on for their lives to the poop rail with both hands, while Lieutenant Fitzmaurice was at his post in the bows in charge of the forecast; Lieutenant Murray stood at the gangway amidships in charge of the mainmast; and Lieutenant Robinson looked after the mizen. Of the three last named none knew the instant that the sea would not sweep them from their posts, for all deck expected that with each terrific roll the mast would go by and overwhelm all. The water was on deck, though coils of rope, tons in weight, and the ship's barge, were dashed madly from side to side, and from such things none but sailors could have escaped annihilation. The dangerous state of the masts was known to all, yet not a man thought of aloft and left upon the yards, though they were whirled backwards and forwards through the air till the men could hardly hold on. Nevertheless they remained there till the reefed foremast, which had blown out from the yard, was hauled in, and then the masts were set, when the ship's deck was made to wear round, which failed like the rest, and left her more helpless and more unmanageable than before. Thus matters stood on the upper deck. On the lower deck, as I have said before, the coals had broken loose again, and there the warrant officers and watchmen were in charge, endeavouring to secure things, and to keep the scuppers from the coal which choked them, and so let off the mass of water which was accumulating faster and faster, and bringing the ship down by the head more and more, each minute. In the stoke hold the men were working up their knees in water, which every now and then washed up against the furnaces and scalded some severely with the steam; while in the engine-room Mr. Brown, with all the officers and men, had literally to rush every minute into the mass of machinery in motion, dragging out and putting in lumps of coal, and in a general way, as the pressure came thundering down, and which so covered the bearings with coal slack that it seemed almost impossible the engines should continue working. These scenes continued almost without the variation of an incident, not for a time only, but for long hours, till, at last, the crew had become so exhausted that it seemed impossible that could longer continue their efforts—for hours after the Niagara, though 2,000 tons larger, had ceased to fight the storm, and was running before it with all the power of wind and steam. Yet during that time, and for long hours more, the crew of the Agamemnon held on, not for a moment, but for an instant. Hopeful and collected, but without the least attempt to underrate the peril, officers and men faced every danger, as if quite aware of its extent and prepared to meet it all. In fact, those on board met the storm as they would meet a foe, and they were determined to fight it as if it fell into their hands. And it is of such a crew as this that the reports alluded to were spread about in Cork, and thence circulated through the kingdom. I sincerely trust that all the total and unreserved contradictions in an age of such a crew as this, and that it should be stated that the Niagara is again to return first from this expedition any tales of the Agamemnon which may originate on board her may receive only the attention they deserve.

I observe that Messrs. Glasco and Elliot take some exception to my remarks on the late fracture of the cable, which they think "calculated to mislead the public and injure their reputation as manufacturers." Both these charges are absurd. The public were not misled by the facts under which the cable broke being stated in the most impartial and correct terms; and as to the second allegation, I believe firmly that Messrs. Glasco and Elliot's reputation as wire-ropes manufacturers could not be injured, for any person who is at all acquainted with that branch of manufacture knows that, beyond all doubt, Glasco and Elliot are the best makers in the world, and that, if any wire rope is made, that it makes breaks at less than the strain it is calculated to bear, it is from a defect in the plan of the rope, and not from any fault occurring in its manufacture. There is little doubt but that such has been the case with the present Atlantic cable. From the day that its manufacture first commenced at Greenwich, I have again and again borne testimony in these columns to the accuracy, care, and skill with which the design given to the manufacturers was being carried out; though on the same occasions I have never hesitated to express my belief that the rope was designed on a wrong plan. These opinions have been strengthened and confirmed by seeing what has taken place during the late expedition, even when the attempt to submerge were made under peculiarly favourable circumstances, and when every step in the progress of the great

undertaking was guarded with unremitting care and skill by those in charge on board the Agamemnon. I have now been done can be attributed to any indication of what may be expected from future efforts, then, indeed, the chances against the present form of cable being safely submerged are so many and so strong as to leave no room for hope that this next attempt will result in anything more than fresh discouragement and injury to the system of submarine telegraphs generally. It will, however, be a most egregious piece of folly if any one, judging from these repeated failures, falls into the error of supposing that an Atlantic telegraph cannot be laid. With fair weather and a proper rope the scheme can be carried out with the same ease as the laying of a cable on the coast, and the expense and difficulty which have attended the construction of half our railways. With the present cable, however, it is quite a different matter. In the recent expedition the first fracture took place on board the Niagara, but as this cable is equally unmanageable, the mechanism, the leading-on pulley, which was immediately refitted, and did not again occur, it ought not to be counted as among the chances against the success of the next attempt. The second break took place beyond all doubt at the bottom of the ocean, and how it was caused, or how it is to be remedied, is not the object of the present narrative. This accident is beyond all doubt the most discouraging circumstance connected with the whole undertaking, for, if the conjecture is correct that the rope parted in consequence of its resting across a sharp ledge of rock in the bed of the Atlantic, a new cable will be required to every future attempt, no matter with what kind of cable it is made. In fact, the only kind of cable which is suited for the work—a very light one—becomes, if this supposition of the rocks below is correct, the very one which could not be laid intact. I therefore prefer supposing that it arose from a defect in the cable itself, and for these reasons.

The whole cable was originally made in two-mile lengths, and afterwards spliced together, so that in the 3,000 miles there exist no less than 1,500 joints. Are all these joints of the conductor to be relied on? It is not the object of the present narrative to consider a rope only the strength of its weakest part? Again, how many air bubbles can be found in the gutta percha which encloses the copper wire? When the first splice was made at the rendezvous one was found in the very place where the joint was to be made, and in consequence of this the cable is paying out the tension is so great that the outside spiral wires compress the tar out of it, as water would be wrung from a wet cloth. Out of how many bubbles is the air compressed in this manner, and as the cable descends into the water, and in consequence of this the air does not get out, but the water gradually forces its way in through the aperture thus left, till the copper conductor is reached and its insulation totally destroyed? On the voyage out to the rendezvous the indefatigable electricians on board the Niagara, by the use of the galvanic battery, found a total break of continuity in the current, about 150 miles below the surface, of a main-deck coil. The exact spot was discovered, the cable uncoiled and the piece cut out, when an examination showed that the copper conductor had been cut in two places, and in consequence of this the cable was covered in such a manner as to touch the outside wires, and of course totally destroy its electrical continuity. Such a defect was at once remedied, but the question naturally arises in how many places has the copper wire actually forced its way through and yet remained as close to the yearning of the wires that the electrical condition is perfect while the cable is in a state of rest, its insulation is destroyed the moment the strain of paying out comes upon it? When such numerous reasons as these exist to show why a break might occur at the bottom of the ocean, and in consequence of this the suggestion is made that natural obstacles exist in the bed of the Atlantic which no one knows anything, and therefore against which no one can possibly provide. The third and last break occurred, as your readers are aware, on board the Agamemnon, and no investigation has been made into the cause of the fracture. It was, indeed, said at the time that the reduction in the speed of the ship had caused her to fall off from her course, and so brought a strain at an angle upon the rope over the stern wheel which the Agamemnon was not intended to bear, and that the matter was quite aware that it was not their fault. The fault lies in the cable itself.

Those connected with the undertaking on board the vessels cannot entirely conceal the fact that the rope is not fit for the work, and that fine wire cables, such as those in use in the telegraph, are not made as soon as possible after they are manufactured. The present cable has been made a year and a-half, and during that time, with what coiling and uncoiling, and water getting at it in many places, in spite of the tar and oil, and the efficiency of the whole has been most sadly deteriorated as a deep sea cable. For any water less than 1,000 or 1,200 fathoms it is still as fine a submarine wire as ever was made, and it would be admirably suited for the Red Sea line, or one from Malta to Alexandria. During the late expedition, while it was being uncoiled at Ketchikan, it suffered so much from damp and casual wet that on its next examination very many miles had to be cut away in parts where it was almost rusted through. It is quite true that some of these pieces were tested and resisted a strain more than twice that which the other had, but there were places so far as to be utterly worthless for any strain. The point of fracture where the cable broke from the Agamemnon showed unmistakable signs of rust inside the outer wires, though by no means to such an extent as would apparently account for the breakage. I have already said that the present expedition results in a last and total failure, it should by no means be regarded as a discouragement to the enterprise, though it should most decidedly teach future companies the necessity of having nothing but the best materials for the purpose, and that the efficiency of the whole has been most sadly deteriorated as a deep sea cable. For any water less than 1,000 or 1,200 fathoms it is still as fine a submarine wire as ever was made, and it would be admirably suited for the Red Sea line, or one from Malta to Alexandria. During the late expedition, while it was being uncoiled at Ketchikan, it suffered so much from damp and casual wet that on its next examination very many miles had to be cut away in parts where it was almost rusted through. It is quite true that some of these pieces were tested and resisted a strain more than twice that which the other had, but there were places so far as to be utterly worthless for any strain. The point of fracture where the cable broke from the Agamemnon showed unmistakable signs of rust inside the outer wires, though by no means to such an extent as would apparently account for the breakage.

I have already said that the present expedition results in a last and total failure, it should by no means be regarded as a discouragement to the enterprise, though it should most decidedly teach future companies the necessity of having nothing but the best materials for the purpose, and that the efficiency of the whole has been most sadly deteriorated as a deep sea cable. For any water less than 1,000 or 1,200 fathoms it is still as fine a submarine wire as ever was made, and it would be admirably suited for the Red Sea line, or one from Malta to Alexandria. During the late expedition, while it was being uncoiled at Ketchikan, it suffered so much from damp and casual wet that on its next examination very many miles had to be cut away in parts where it was almost rusted through. It is quite true that some of these pieces were tested and resisted a strain more than twice that which the other had, but there were places so far as to be utterly worthless for any strain. The point of fracture where the cable broke from the Agamemnon showed unmistakable signs of rust inside the outer wires, though by no means to such an extent as would apparently account for the breakage.

I observe that Messrs. Glasco and Elliot take some exception to my remarks on the late fracture of the cable, which they think "calculated to mislead the public and injure their reputation as manufacturers." Both these charges are absurd. The public were not misled by the facts under which the cable broke being stated in the most impartial and correct terms; and as to the second allegation, I believe firmly that Messrs. Glasco and Elliot's reputation as wire-ropes manufacturers could not be injured, for any person who is at all acquainted with that branch of manufacture knows that, beyond all doubt, Glasco and Elliot are the best makers in the world, and that, if any wire rope is made, that it makes breaks at less than the strain it is calculated to bear, it is from a defect in the plan of the rope, and not from any fault occurring in its manufacture. There is little doubt but that such has been the case with the present Atlantic cable. From the day that its manufacture first commenced at Greenwich, I have again and again borne testimony in these columns to the accuracy, care, and skill with which the design given to the manufacturers was being carried out; though on the same occasions I have never hesitated to express my belief that the rope was designed on a wrong plan. These opinions have been strengthened and confirmed by seeing what has taken place during the late expedition, even when the attempt to submerge were made under peculiarly favourable circumstances, and when every step in the progress of the great

undertaking was guarded with unremitting care and skill by those in charge on board the Agamemnon. I have now been done can be attributed to any indication of what may be expected from future efforts, then, indeed, the chances against the present form of cable being safely submerged are so many and so strong as to leave no room for hope that this next attempt will result in anything more than fresh discouragement and injury to the system of submarine telegraphs generally. It will, however, be a most egregious piece of folly if any one, judging from these repeated failures, falls into the error of supposing that an Atlantic telegraph cannot be laid. With fair weather and a proper rope the scheme can be carried out with the same ease as the laying of a cable on the coast, and the expense and difficulty which have attended the construction of half our railways. With the present cable, however, it is quite a different matter. In the recent expedition the first fracture took place on board the Niagara, but as this cable is equally unmanageable, the mechanism, the leading-on pulley, which was immediately refitted, and did not again occur, it ought not to be counted as among the chances against the success of the next attempt. The second break took place beyond all doubt at the bottom of the ocean, and how it was caused, or how it is to be remedied, is not the object of the present narrative. This accident is beyond all doubt the most discouraging circumstance connected with the whole undertaking, for, if the conjecture is correct that the rope parted in consequence of its resting across a sharp ledge of rock in the bed of the Atlantic, a new cable will be required to every future attempt, no matter with what kind of cable it is made. In fact, the only kind of cable which is suited for the work—a very light one—becomes, if this supposition of the rocks below is correct, the very one which could not be laid intact. I therefore prefer supposing that it arose from a defect in the cable itself, and for these reasons.

The whole cable was originally made in two-mile lengths, and afterwards spliced together, so that in the 3,000 miles there exist no less than 1,500 joints. Are all these joints of the conductor to be relied on? It is not the object of the present narrative to consider a rope only the strength of its weakest part? Again, how many air bubbles can be found in the gutta percha which encloses the copper wire? When the first splice was made at the rendezvous one was found in the very place where the joint was to be made, and in consequence of this the cable is paying out the tension is so great that the outside spiral wires compress the tar out of it, as water would be wrung from a wet cloth. Out of how many bubbles is the air compressed in this manner, and as the cable descends into the water, and in consequence of this the air does not get out, but the water gradually forces its way in through the aperture thus left, till the copper conductor is reached and its insulation totally destroyed? On the voyage out to the rendezvous the indefatigable electricians on board the Niagara, by the use of the galvanic battery, found a total break of continuity in the current, about 150 miles below the surface, of a main-deck coil. The exact spot was discovered, the cable uncoiled and the piece cut out, when an examination showed that the copper conductor had been cut in two places, and in consequence of this the cable was covered in such a manner as to touch the outside wires, and of course totally destroy its electrical continuity. Such a defect was at once remedied, but the question naturally arises in how many places has the copper wire actually forced its way through and yet remained as close to the yearning of the wires that the electrical condition is perfect while the cable is in a state of rest, its insulation is destroyed the moment the strain of paying out comes upon it? When such numerous reasons as these exist to show why a break might occur at the bottom of the ocean, and in consequence of this the suggestion is made that natural obstacles exist in the bed of the Atlantic which no one knows anything, and therefore against which no one can possibly provide. The third and last break occurred, as your readers are aware, on board the Agamemnon, and no investigation has been made into the cause of the fracture. It was, indeed, said at the time that the reduction in the speed of the ship had caused her to fall off from her course, and so brought a strain at an angle upon the rope over the stern wheel which the Agamemnon was not intended to bear, and that the matter was quite aware that it was not their fault. The fault lies in the cable itself.

The simplest mechanical operations. Once the rope was covered with a difficulty was created for the engineers to overcome. A strain on the cable in paying out became absolutely necessary to prevent its sinking in a mass; and, for the reasons I have shown, this fine wire cable has now become unequal in many places to bear the requisite tension of the machinery. In fact, all that the wire covering now effects is to strain the gutta percha to the point of breaking it in a mass; and, for the reasons I have shown, this fine wire cable has now become unequal in many places to bear the requisite tension of the machinery. In fact, all that the wire covering now effects is to strain the gutta percha to the point of breaking it in a mass; and, for the reasons I have shown, this fine wire cable has now become unequal in many places to bear the requisite tension of the machinery. 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This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some faint smudges and discoloration, characteristic of old paper. The right edge of the page is bound into a dark spine. There is no text or other markings on the page.



