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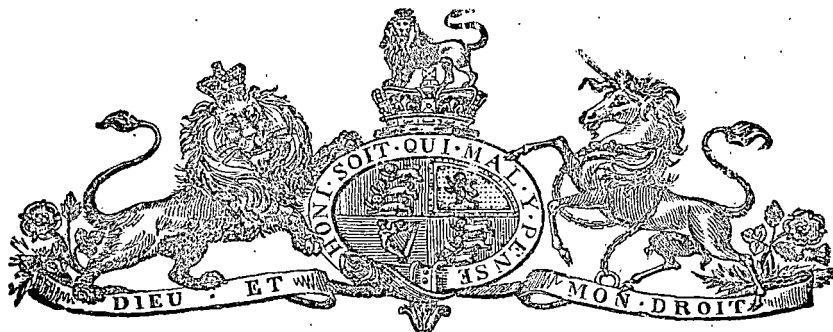
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## POSTAL COMMUNICATION

BETWEEN GREAT BRITAIN AND THE AUSTRALIAN COLONIES.

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Laid upon the Table by the Colonial Treasurer, and ordered by the House to be printed, 15 January, 1867.



TASMANIA.  
CIRCULAR.

*Downing-street, 22nd September, 1866.*

SIR,

I HAVE the honor to transmit to you a copy of a letter from the Board of Treasury, enclosing a Minute of their Lordships upon the subject of Postal Communication between this Country and the East Indies, China, Japan, and the Australian Colonies.

I also annex a copy of the Report referred to by their Lordships from the Select Committee on East India Communication which has been laid before Parliament, and of the Report addressed to the Postmaster-General by Captain Tyler, R.E., of his recent inspection of the Railways and Ports of Italy with reference to the use of the Italian route for the conveyance of the Eastern Mails.

I request that you will lay these papers before your Responsible Advisers, in order that they may make known their wishes and views on the several questions raised in their Lordships' Minute so far as they affect the arrangements to be made for the conduct and maintenance of the Postal Service between this Country and the Australian Colonies.

I have the honor to be,  
Sir,

Your most obedient humble Servant,

CARNARVON.

Governor GORE BROWNE, C.B.

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*Mr. HUNT to Sir F. ROGERS, Bart.*

*Treasury Chambers, 6th September, 1866.*

SIR,

I AM directed by the Lords Commissioners of Her Majesty's Treasury to transmit herewith, for the information of the Earl of Carnarvon, copy of a minute of their Lordships, dated 4th instant, upon the subject of the postal communications between this country and the East Indies, China, Japan, and the Australian Colonies, and I am to request that you will move his Lordship to cause the communications therein suggested to be made to the Governments of the several Colonies adverted to therein.

I am, &c.

(Signed) GEORGE WARD HUNT.

Sir F. ROGERS, Bart.

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*Copy of Treasury Minute, dated 4th Sept. 1866.*

My Lords have before them the Report of the Select Committee of the House of Commons appointed during the last Session of Parliament, "to enquire into the practical working of the present system of telegraphic and postal communication between this country and the East Indies, and who are instructed to extend their enquiry to China, Japan, Australia, and Mauritius," and also a report from the Postmaster-General, dated 9th August (made in pursuance of directions contained in their minute of the 2nd August) on the whole subject of the postal communication between this country and the East Indies, China, Japan, and the Australian Colonies.

The following are the services by which, at the present time, the postal communication between this country and the East Indies, China, Japan, the Australian Colonies, and Mauritius is maintained.

They consist, firstly, of four services per calendar month between this country and Alexandria, *via* Marseilles, with four corresponding services *via* Southampton;

Secondly, of four services through Egypt in connexion with the foregoing, between Alexandria and Suez;

Thirdly, of two services per calendar month between Suez and Bombay;

Fourthly, of two services per calendar month between Suez and Galle, within each case a packet between Galle and Calcutta, and another between Bombay and Galle, and onwards to China and Japan.

Fifthly, of one service per calendar month between Galle and Sydney (touching at King Georges' Sound and Melbourne, and with branches to South Australia, Tasmania, Queensland, and New Zealand); and

Sixthly, of one service per calendar month (maintained at the sole expense of the Mauritius Government) between Galle and Port Louis.

Except the branches in Australia and the packet between Galle and Mauritius, the above services, so far as they are sea services, are performed by the Peninsular and Oriental Steam Navigation Company, and at the following annual cost:—

Services to India and China and so much of the Australian service as lies between this country and Galle .....	£230,125
Australian service between Galle and Sydney .....	119,500
	<hr/> £349,625

To this sum must be added £19,550 for the branches in Australia, £12,000 for conveyance through Egypt, and £14,765 for miscellaneous expenses, but nothing at present for the service between China and Japan, that service having hitherto been performed by the Peninsular and Oriental Company gratuitously.

It thus appears that, exclusively of the expense of conveying a portion of the mails between Dover and Calais, and through France (for the latter of which an additional charge is made in the rate of postage), and exclusively of the expense of the Inland service at each end, the present cost of the conveyance of the Indian, China, and Australian Mails, and of the Mauritius Mails (between this Country and Galle), is nearly £396,000 per annum.

If from this sum be deducted the estimated amount of sea postage (about £236,000 per annum) it will be seen that the services in question are attended with an annual loss of £160,000, of which it may be roughly said one-half is borne by India and the different Colonies concerned, and the other half by the mother country.

With the exception of Australia, the contracts under which the services are performed are terminable at any time on one year's notice; and on a notice of two years the Australian Contract may also be terminated.

The postage on letters *via* Southampton, between India and this country, and Australia and this country, is sixpence the half-ounce letter; and it has, with a view of diminishing the great loss before referred to occasioned by the expense of the Packet Service, been proposed at different times to the Government of India, and to those of the Australian colonies, to double the postage on letters, but those Governments have hitherto, with the exception of New South Wales, declined to accede to the proposals made.

My Lords now proceed to consider the recommendation of the Select Committee with regard to the establishment of a weekly communication with India *via* Bombay, and the discontinuance thereupon of the separate postal service between this country and Madras and Calcutta.

Adverting to the facilities which will be afforded by the early completion of the main lines of railway communication between the port of Bombay and Calcutta, Madras, the North Western Provinces, and the Punjab, My Lords entirely concur in opinion with the Select Committee that Bombay should be the port of arrival and departure of the mails to and from India, and that the time has arrived for the establishment of a weekly service to and from that country, and they will, on learning from the Secretary of State for India in Council that his Lordship concurs in these views, take the necessary steps for carrying them into effect.

Before, however, a final decision is arrived at, it may be well to consider whether, with a view of obtaining the best route through Europe towards Alexandria and Suez, and thereby expediting the conveyance of the mails between this country and India, it may not be advisable to substitute the port of Brindisi in the South of Italy for the Port of Marseilles, from which port the mail, *via* France, is now sent.

It appears from the able Report of Captain Tyler, of the Royal Engineers, to the Postmaster-General, which my Lords have perused with much interest, that if the Brindisi route were made use of instead of that

by Marseilles, there would be a saving in the time occupied in the conveyance of the mails between this country and Alexandria of  $35\frac{1}{2}$  hours previous to the construction of the Mount Cenis Summit Railway of  $39\frac{1}{2}$  hours after the construction of that Railway, and  $42\frac{1}{2}$  hours after the completion of the permanent tunnel line from St. Michael to Susa.

The great saving of time thus effected affords in the opinion of my Lords a conclusive reason for the adoption of the Port of Brindisi as the port of communication with Alexandria instead of Marseilles, the more so as it appears that the Italian Government are willing and anxious to make every necessary arrangement for facilitating the conveyance of the British Mails through Italy.

It will be therefore necessary to give notice to the Peninsular and Oriental Steam Navigation Company of the intention of the Government to put an end to the contracts at present existing for the conveyance four times a month of the mails between Southampton and Alexandria, and Marseilles and Alexandria, and to call for tenders for a *weekly* service between Southampton and Alexandria and Brindisi and Alexandria. It will also be necessary to give notice for the discontinuance of the two services *per calendar month* between Suez and Bombay, and of the two services *per calendar month* between Suez and Galle within each case, the packet between Galle and Calcutta, and the other packet between Bombay and Galle, and from thence to China.

With regard to the conveyance of mails to China and Japan, my Lords are of opinion that the service to be constituted for the conveyance of the Indian mails should be made use of as far as Aden, and with this view it will be necessary, instead of the mails for these countries being despatched twice a month as at present, that the service should be converted into one, once every fortnight, and tenders will therefore have to be called for a fortnightly service between Aden and Japan, touching at Galle, Penang, Singapore, Hong Kong, and Shanghai, the parties tendering to state for what additional subsidy they would be willing to continue the service from Aden to Suez.

As respects the time to be allowed in each instance for the performance of the new service, the Postmaster-General proposes to act on the plan which has for some time been in use, viz., to ascertain what would be the charge, both at the present rate of sailing and at a higher rate, so as to enable this Board to decide whether or not the increased speed would warrant the increased expense, my Lords, advertg to the recommendation of the Select Committee, "that the time table should be based on a prescribed speed of not less than eleven nautical miles per hour on the voyage between Marseilles and Alexandria, and ten miles per hour between Suez and Bombay; but that the tenders be required to state also terms in each case for higher rates of speed, of not less than one additional half-mile per hour," are of opinion that the proposed course of proceeding by the Duke of Montrose should be adopted.

As it is probable that the expense of the proposed weekly service to and from Bombay, and the fortnightly service to and from China and Japan, will considerably exceed the amount of the postage which will be received on the correspondence forwarded by these services, it is necessary that some arrangement should be made as to how the excess in these cases is to be met.

With regard to the India service there can be no question but that, as at present, it should be made good in equal proportions by the Indian and Home Governments, but with respect to the China service, advertg to the opinion expressed by the Select Committee, that "the arrangements under which India now defrays a moiety of the net cost of the China service, after deducting the postal receipts, will not under the proposed arrangements be equitable as regards that Government, and should be modified;" it is necessary to consider what modification it will be expedient to make. The Contract Packet from Bombay to Galle, and thence on to China, by which line my Lords presume the correspondence between India and China has been hitherto conveyed, being about to be discontinued, it appears to my Lords that it will be necessary for the India Government itself to provide fortnightly the means of conveying the correspondence between India and China, at any rate as far as Singapore, in which case the only claim which could fairly be made on the Indian Government on account of the China mail service, would be for the conveyance of its correspondence between Singapore and China and Japan by the contract Packet from Point de Galle.

It is reasonable to expect that great expense will be imposed by these services on the British and Indian exchequer, and my Lords propose to reserve for future consideration whether it would be expedient to reduce such expense by raising the postage of letters between this country and India, and they propose, in the meantime, to call the attention of the Secretary of State for India to this question.

The large and important island of Ceylon has hitherto not contributed towards the loss incurred by the packet service by which its correspondence with this country has been conveyed, my Lords are of opinion that the time has now arrived when it may fairly be called upon to contribute towards the loss in question in proportion to its correspondence, at any rate so long as the postage on letters to and from Ceylon continues at the moderate rate of 6d. the half-ounce letter, and my Lords would be glad if the Secretary of State for the Colonies would make an intimation to this effect to the Government of that island.

With respect to the postal communication *viâ* Suez with the Australian colonies: It is at present a monthly service; the mails being despatched to Alexandria on the 20th of each month *viâ* Southampton, and on the 26th *viâ* Marseilles. From Suez the mails are conveyed as far as Point de Galle by the Calcutta packet corresponding with that leaving Southampton on the 20th of the month, and from Point de Galle they are carried by vessels of the Peninsular and Oriental Company, under a contract recently entered into with that Company, but which is terminable on a notice of twenty-four months being given by either party.

Various complaints having reached this Board from the Australian colonies of the manner in which the Peninsular and Oriental Steam Navigation Company have hitherto carried on the service, and the colony of New South Wales having gone so far as to give notice of their intention to withdraw from their share in the contract, it appears to my Lords (although they do not think there are sufficient grounds for these complaints, and are of opinion that on the whole the service has been well performed) that it would be advisable also to serve notice on the Company, that, at the termination of twenty-four months, the present contract for the conveyance of the mails between Point de Galle and Sydney will be discontinued.

As the mails to India will hereafter be carried weekly instead of four times a month, and those to China fortnightly instead of twice a month, it will be necessary, unless a service expressly for the conveyance of the Australian mails between this country and Alexandria, and Brindisi and Alexandria, is provided, that the Australian mail service should also be altered from a service once a month to a service once every four weeks, so as to render the packets conveying the India and China mails to Alexandria, and the China mails to Point de Galle, available for the conveyance of the Australian mails as far as point de Galle. It is true that it might be possible to make use of the vessels of the Messageries Impériales, which are under contract with the French Government for the conveyance of mails monthly between France and China, for the carriage of the Australian mails as far as Point de Galle, but my Lords are given to understand that the expense of making use of these vessels would amount to very considerably more than the extra expense which would be incurred by the conversion of the service to those colonies from a monthly to a service once every four weeks.

It now becomes necessary to consider in what manner the service between Point de Galle and the Australian Colonies is to be provided for, on the discontinuance of the present contract with the Peninsular and Oriental Steam Navigation Company. My Lords would be glad if the Australian Colonies would themselves in combination undertake to provide this service, in which case they would, as at present, be prepared on behalf of the Imperial Government to defray one half of the reasonable cost of such service; and they would suggest that the Secretary of State for the Colonies should communicate with the different Colonial Governments with a view to such an arrangement being carried out. If, however, the several Colonial Governments should find it impossible to come to a common understanding on the subject, and to adopt a practicable arrangement, the Home Government will not refuse to undertake to make the necessary contract for providing the service between Point de Galle and Sydney; it must be, however, on the distinct understanding that they shall agree each and all to whatever arrangements the Home Government may consider most conducive to the interests of the mother country and of the Colonies collectively. My Lords, however, would much prefer that the Colonies themselves should, in combination, make the contract or contracts for the service in question.

As regards the services between this country and Mauritius, my Lords regret that the future fortnightly service to Galle will not work in altogether with the monthly service which the Colonial Government has organized between Mauritius and Galle.

My Lords, however, trust that the Colonial authorities will be able to make arrangements which will obviate this inconvenience.

It now remains merely to recapitulate the steps which will require to be taken.

Firstly. Notice will have to be given to the Peninsular and Oriental Steam Navigation Company of the intention of Her Majesty's Government to put an end, at the proper periods, to all the contracts they have with that Company for the conveyance of the Mails both on this side and on the other side of the Isthmus of Suez; and

Secondly. Tenders will have to be called for the several services adverted to in this Minute, such services being divided into five parts. (Parties tendering to be at liberty to tender for any one or more of such services;) viz.—

1st. A weekly service between Brindisi and Alexandria.

2nd. A weekly service between Southampton and Alexandria.

3rd. A weekly service between Suez and Bombay.

4th. A fortnightly service between Aden and Japan, touching at Galle, Penang, Singapore, Hong Kong, and Shanghai.

The parties tendering for this service to state for what additional subsidy they will be prepared to extend the service to Suez.

5th. A service as at present from Galle to Sydney, with a provision that the contract for this service may be accepted either by the Home Government or the Colonies.

Adverting to the opinion expressed by the Select Committee, "that in consideration of the outlay which must necessarily be incurred in the construction of new vessels or adapting those now employed for

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NOTE.—By the terms of the present contract with the Peninsular and Oriental Steam Navigation Company, they are bound to provide a communication once every four weeks for an additional subsidy of £10,000 a year.

the efficient performance of the future service to India, it is expedient that the new contracts shall be for a term of years certain, subject to a subsequent notice of two years on either side," my Lords would propose that, so far as respects the first four services above adverted to, the tenders should be for a term of six years certain, and thenceforth subject to a notice of two years at the end of the first four or any subsequent year.

As regards the 5th service, however, viz., that between Galle and Sydney, although the necessary 24 months' notice should immediately be given to the Peninsular and Oriental Steam Navigation Company for the discontinuance of the present contract, it appears to my Lords that it would be inexpedient to call at once for tenders for a new service, or to fix a period for such service until they have before them the views of the respective Colonies on this subject, which my Lords trust the Earl of Carnarvon will take the earliest opportunity of eliciting.

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## EASTERN MAILS.

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RETURN to an Order of the Honorable The House of Commons, dated 2 August, 1866;—for,

*COPY* "of REPORT from Captain TYLER, R.E., to Her Majesty's Postmaster-General, of his recent Inspection of the Railways and Ports of *Italy*, with reference to the Use of the Italian Route for the Conveyance of the EASTERN MAILS."

GEORGE WARD HUNT.

*Treasury Chambers, 2 August, 1866.*

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## REPORT.

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1, Whitehall, 19 July, 1866.

MY LORD DUKE,

I HAVE now the honor to report, for Your Grace's information, that in compliance with the instructions which I received in February last from Lord Stanley of Alderley, I have, during the months of May and June, examined the railways and ports of Italy, and inspected the works of the tunnel of the Alps, and of the Mont Cenis Railway; and have also placed myself in communication with the public officers and the chief officers of the railway companies in France and Italy on the subject of the conveyance through Italy of the eastern mails.

Under existing circumstances, the fast mails between Great Britain and the East must necessarily pass through Egypt, and it is only requisite to determine at present the best route through Europe towards Alexandria and Suez. The fast route now employed, measuring 853 English miles from London to Marseilles, and 1460 nautical miles from Marseilles to Alexandria, is in point of distance nearly the shortest that can be adopted; but inasmuch as it is practicable to travel more than twice as fast on land, where good railways are available, as by sea, and with less risk of delay from stress of weather, it becomes advantageous to decrease the sea passage as far as possible, when this can be done without too heavy a cost, in order to effect a saving of time. When the railway down the east coast of Italy was opened for traffic in May 1865, it became obvious that it would be possible, at no very distant date, to substitute some port in the south of Italy for the port of Marseilles, as the point of departure for Egypt, and I took the opportunity in June of that year to refer to the subject in my Report to the Board of Trade on the experimental railway then constructed on the Mont Cenis.

Of the Italian ports to which railway communication has up to this time been extended, the nearest to Egypt is Brindisi, which is 1504 English miles from London by the Mont Cenis route, and 822 nautical miles from Alexandria, thus affording a decrease of 638 nautical (734 English) miles in the sea passage, and an increase of 651 English miles in the land passage. The distance between Valetta and Alexandria being the same within a few miles as that between Brindisi and Alexandria, it may be said, indeed, as far as the sea is concerned, that the voyage from Marseilles to Malta would be avoided by the adoption of Brindisi as the terminus for the land journey, while the total distance from London to Alexandria would be 83 English miles shorter by the Brindisi route than by the Marseilles route.

There are other ports in the south of Italy, such as Otranto and Gallipoli, which are each 37 nautical miles nearer to Alexandria than Brindisi, while Taranto and Reggio (in the Straits of Messina) are practically at the same distance from Alexandria as Brindisi and Malta.

The Meridional Railway of Italy is already working to Lecce, 39 kilometres south of Brindisi, but the works have been suspended upon the line to Otranto, which is 45 kilometres further; and it is a question whether that portion will now be completed for some time to come. Looking to the relative importance of the two places, it is probable that the branch from Lecce to Gallipoli, which is 20 kilometres long from its probable junction with the Otranto line, will be made before the portion to Otranto; but the studies have not yet been definitely made for the Gallipoli branch.

The port of Otranto (the ancient Hydruntum), of which I enclose a diagram, with soundings marked upon it, contains 420,000 superficial metres of water, with depths varying from 2 to 13 metres. But it possesses no protection for bad weather from a north-easterly direction, and no accommodation or facilities for a mail packet

station. It could only be fitted for that purpose by the expenditure of a large sum of money, and the Italian Government have no idea of devoting money to its improvement. I did not even consider it worth while to visit Otranto, though I made a personal inspection of all the other Italian ports to which I have referred, as well as those of Naples and Genoa.

The port of Gallipoli has greater natural advantages, and is more used for purposes of commerce. Oil is shipped here in great quantities. The promontory on which the town is built affords shelter on either side of it according to the direction of the wind. But little money has yet been expended to turn its natural advantages to account, and the only project for its improvement is indicated in the accompanying diagram, on which also the soundings are shown. The existing mole is to be extended to a total length of 300 metres, and this will afford a superficial area in the northern harbour of 90,000 metres of water, varying in depth from  $1\frac{1}{2}$  to 11 fathoms.

In the direction of Taranto, the Meridional Railway has not yet been opened for traffic further than Gioja, which is 53 kilometres from the main line at Bari; but the portion between Gioja and Taranto, 63 kilometres long, is under construction, and is expected to be ready for traffic in two years. The town of Taranto (the ancient Tarentum) separates the outer harbour, which contains 36,000,000 superficial metres of water, from the "mare piccolo" (little sea), or "seno interno" (internal bay), containing 19,000,000; the depth of water varying in the greater part of the former from 8 to 36 metres, and of the latter from 6 to 13 metres. There is at present no means of communication by large vessels from one to the other, as will be seen by the enclosed diagram.

The northern channel is spanned by a masonry viaduct which forms the principal means of communication with the town, and the southern channel (also crossed by a masonry bridge) is very shallow, having, in fact, been excavated originally by Ferdinand the First of Arragon, as a ditch only to the fortress which it bounds. There are projects for widening and deepening this south channel, to allow of the passage of the largest vessels into what will then become the internal harbour; but no money has yet been voted for the purpose, or indeed for any works for the improvement of the harbour, although it is much used for the Italian men of war, and is indeed the chief naval station of the south of Italy.\* Considering the extent of the harbour, its great natural advantages in a military as well as in a naval point of view, and the extent and position of the "seno interno," it is no matter of surprise that Taranto should have been selected for a military port: and looking to their relative situations, the Italian Government appear to have wisely determined upon making Taranto their principal military, and Brindisi their principal commercial southern port. I may here add that they would not be willing, if for this reason alone, to see the Egyptian mail steamers running to Taranto.

There are, however, other reasons against the adoption of Taranto as a mail station. The distance, indeed, by sea from Alexandria to Taranto is, as I have stated, nearly equal to that to Brindisi, and the distance by land is only five kilometres longer by Taranto than by Brindisi, while the anchorage is good at both ports; but the weather is frequently bad, and the sea rough at the entrance (66 miles across) to the Gulf of Taranto; much of the land is low at the sides of the gulf; a misty atmosphere is frequently experienced with southerly winds in winter; the lights are not at present so good as those at Brindisi, and generally in bad weather Brindisi is an easier port to make than Taranto; considerations which are of great importance in the case of mail packets timed to run at high speed, and expected, as far as possible, to be punctual in all weathers. Besides the want of a railway, there is no dock or landing pier at Taranto, and the hotel accommodation in the town is very limited and indifferent.

The railway from Taranto to Reggio, 448 kilometres (278 English miles) in length has been commenced; but the works are now suspended, and there appears to be little probability of its completion for some time to come. The total distance from London to Reggio would be 453 kilometres (281 English miles) further than from London to Brindisi. Reggio has the advantage of being on the straight course of a steamer proceeding by the Straits of Bonifacio and the Straits of Messina from Marseilles to Alexandria, but it is merely an open roadstead without protection, particularly from southerly gales; and though the anchorage is good, the postal steamers of the Italian Government are frequently unable to communicate with the shore during the winter, and are obliged to take the mails into the harbour of Messina.

There have been four projects for forming a port at Reggio: (1) opposite the town for small craft now abandoned; (2) north of the town by diverting the course of a small river; (3) south of the town by excavation, which would involve a considerable outlay, and does not meet with approval; (4) 300 metres long by 150 metres wide at Pentimela, 2000 metres north of Reggio, to be connected with the railway station; but as the station is on the south of the town, and the town is situated on a hill sloping abruptly to the sea, this connection would not be easily made. The Government is bound to provide a port by the time that the railway is completed, and proposes to expend 4,200,000 francs for the purpose; but many years will probably elapse before it is carried out. There is no idea of forming a dry dock at Reggio, there being one in course of construction at Messina, 100 metres long, which is to be completed in five years.

The width of the Straits of Messina is here about 13,000 yards, and the numerous currents through them, which, with the liability to heavy gusts of wind, were so alarming to the ancients, have formed an interesting subject of study, and report by an Italian commission, as well as by Admiral Smyth and others. Their effect upon the large steamers of the present day is, however, comparatively unimportant.

It will thus be seen that it would not be practicable to adopt Reggio as a port of communication for the eastern mails, at all events for many years to come, as well for the want of a port as for the want of a railway; and that even when the railway and the port shall have been completed, the land journey would be increased (by the only route which can now be contemplated) by 281 miles, while the length of the sea passage would be about the same as by Brindisi.

Naples would appear to be in some respects a more desirable place of call for steamers running between Marseilles and Alexandria than Reggio. But the sea voyage between Naples and Alexandria would be increased by 180 nautical miles, or 18 hours, as compared with the sea passage *via* Brindisi; and there is as yet no complete means of railway communication between Naples and the north of Italy. The shortest route to Naples will be *via* Genoa and Rome, by which the distance from Susa to Naples is 996 kilometres, as against 1152 from Brindisi, showing a saving of 156 kilometres or 96 English miles. But there are two breaks in the railway communication of this route—the first from Genoa to Spezzia, for 87 kilometres, where the railway works are

\* The construction of some magazines on the shore of the "mare interno" has, however, been authorised.

now suspended, and the second from Nunciatella to Civita Vecchia, for 58 kilometres, where the railway is under construction, though not apparently with much activity. Another route, *viâ* Ancona and Foggia, measures 1117 kilometres from Susa to Naples, showing a saving of 35 kilometres (21 English miles) over the land route by Brindisi. There are other routes to Naples, such as that *viâ* Bologna, Pistoja, Pisa, Livorno, which is, measured from Susa, 1165 kilometres in length, or 13 kilometres further than to Brindisi. And on this line there is only the break above mentioned between Civita Vecchia and Nunciatella. There are also routes by Firenze and Torricella, with a break to Foligno; and by Firenze, Empoli, Siena, Orvieto, with a break to Orte. But they do not offer any advantages for a mail route at present.

There is no landing-stage, or pier, or dry dock in the Porto Grande, which is the commercial port at Naples; but there is a dock 75 metres long in the "Porto Militare." The existing quays in the Porto Grande are small, but plans are being prepared for their extension, as indicated in red lines on the accompanying chart. It is proposed to construct a new quay, 600 metres long, with a pier 150 metres long by 50 metres wide, and these may be commenced in 1867. There will be seven metres of water at the head of the pier, and the same depth will probably be obtained alongside of the quay. The anchorage is tolerably good, and there are plenty of buoys. The pier of the "Porto Militare" is being extended, as shown in red on the chart, of which 300 metres are to be completed this year; and 500 metres more are to be completed in 1871.

When railway communication is completed to Naples *viâ* Foggia, or, still more, when it is complete *viâ* Genoa and Rome; and when the Roman territory shall belong to or be available for through transit to the Italians, Naples may become an important place of call for steamers running between Marseilles and Alexandria; but the Naples route can never successfully compete with the Brindisi route, in consequence of the extra length of the sea passage; and it is impossible to contemplate the employment of Naples at present as the port for the eastern mails.

The harbour of Brindisi, which it becomes my duty next to describe, is composed, as will be seen by the accompanying tracing, of an outer port, 2000 metres long by 1000 metres wide, connected by a channel 260 metres long and 60 metres wide, with two inner arms; of these, the western arm is 1500 metres long and 250 metres wide, and the eastern arm is 1100 metres long and 200 metres wide. Of the numerous soundings noted on the tracing, the figures marked with one line were taken in 1864, those marked with two lines in January 1866, and those unmarked by lines in May 1866.

Brindisi (the well-known Brundisium) was formerly in much repute, and was commonly used by the Romans in crossing to Dyrrachium, on their way to Greece, as being the best harbour on the west coast of the Adriatic; but the town declined after the Prince of Taranto destroyed the entrance to the inner arms by sinking ships in the channel, to keep his enemies out, in the 15th century; and the recent operations appear to have been the first serious attempt made to remove the accumulation of sand and silt, &c. that followed upon these obstructions.

There is now a clear depth of more than six metres, or 19½ feet, through the channel, into the western arm; and this depth is, I understand, to be increased to eight metres, or upwards of 26 feet. The approach to the harbour is well lighted, and the anchorage is good. The contract steamers of the Italian Government (the Adriatico-Orientale Company) have now ceased to run to Trieste and Ancona, and they ply between Brindisi and Alexandria only. Three of them were in the harbour while I was at Brindisi, in May last, one in the outer harbour, and two within a few yards of the quays of the town; they are about 267 feet long by 24 feet beam, and are less than 1000 tons measurement; they draw 15 feet of water when fully loaded, but they were not drawing at that time more than 13 ft. 6 in. to 14 feet of water; and with this draught they had no difficulty in going to their coaling hulk in the western arm.

The ordinary rise and fall of the tides does not exceed 0·5 of a metre, or rather more than a foot and a half; and there is not therefore the same facility for docking vessels in the Mediterranean as in this country. There is, for this reason, a greater tendency to use "scali d'alaggio," or hauling slips. The Italian Government have granted a concession for such a slip (L. M. in drawing) for vessels up to 2000 tons burthen, and it is to be constructed in two years, from April 1866, at the inner extremity of the western arm. Contracts were signed in June also for the other works, shown in red upon the drawing, including—

(1.) A quay (L. K.), 500 metres long, "near the Forte di Terra, at a cost of 580,000 francs, to be finished in 30 months.

(2.) A boundary wall for the "Canal d'Ingresso," or channel between the outer harbour and the inner arms, at a cost of 550,000 francs, to be finished in 30 months.

(3.) A breakwater (A B) 380 metres long, for closing the "Bocca di Puglia," between the mainland and the island of St. Andrea; a mole (C D) 260 metres long projecting to the east from the Forte di Mare; a retaining wall (E F), 950 metres long, on the Costa Morena; all to be finished in three years, at a cost of 1,700,000 francs. There are, further, in course of construction (at N O) 260 metres of quays, destined for the goods station of the railway; and the general excavation of the harbour, to a depth of 7½ metres, is being proceeded with. At P and Q (near which there is a fountain of good water) there are to be a site for the deposit of coal and a coaling-stage; and there is a project for constructing (at R), at the extremity of the eastern arm, a graving-dock, 120 metres long; but this has not yet been decided upon.

The littoral current runs south at this part of the coast, at the rate of, say, quarter knot per hour, varying, of course, according to wind and tide. The closing of the Bocca di Puglia, and the mole on the south-east of the Forte di Mare, are important, as well for the protection of the excellent anchorage which exists south of that fort, as for the prevention of the deposit brought into the harbour by this littoral current. But all that is required in order that mail steamers may conveniently ply to the port is to push forward the excavations by dredging, so as to enable those steamers, of whatever company, to run into a convenient landing-stage to be constructed inside the channel leading to the inner arms. The Italian Government express their readiness, if the British Government should determine to forward their mails by the Brindisi route, to provide such accommodation, if necessary, by the Spring of 1867; either at No. which they are preparing for the railway goods station, or at some other point in the internal port to which they would construct a branch railway; so as, in any case, to provide a means of transferring the mails without delay from the railway to the steamer, and *vice versa*.



Under all the circumstances of the case, I am of opinion that the harbour of Brindisi will be better adapted for a mail port than any other harbour in the south of Italy, and there appears to me to be no reason why good temporary accommodation should not be afforded by next spring, as proposed, pending the completion of the permanent works above described. The Italian Government wished, however, that the alternative of the two places of landing should, while I was in Italy, be left undecided. The hotel accommodation at Brindisi is at present very limited and of an inferior description; but from what I have heard from various quarters I can have little doubt that better hotels will readily be supplied, by private or joint stock enterprise, as soon as the question of route is settled, as would no doubt be the case in regard to any port that might be selected.

I shall next proceed to refer to the land route by which the Port of Brindisi may be approached.

The mail trains would of course run to Paris, and as far as Macon, over the same railways, as at present; but would diverge at Macon from the Marseilles line and take the line to Amberien, Culoz, Chambery, and St. Michel, the distance from Macon to St. Michel being 146 miles. In addition to owning the line to Culoz, the Paris, Lyons, and Mediterranean Company have lately acquired also that to St. Michel.

There is a double line of way as far as Culoz, but a single line, doubled at the stations, from that place to St. Michel. The gradients are steep and the curves sharp in places, especially between Amberien and Culoz. The steepest gradient near St. Michel is 1 in 43, and the sharpest curve between Culoz and St. Michel has a radius of 400 metres. The permanent way is laid with rails of different Sections, some with, some without chairs, and weighing from 34 to 36 kilogrammes per metre. The chairs or rails are secured by trenails, spikes, or dog-spikes to transverse sleepers. The joints of the rails are all fished between Culoz and St. Michel, but the fishing has not yet been completed from Macon to Culoz. There are nine single line tunnels, making a total of 3151 metres, between Culoz and St. Michel. There is no night service as yet on this line, so as to provide for a train leaving Paris in the morning for Italy, the only through train now leaving Paris at 8.40 p.m.

The journey from Macon to St. Michel is now performed by the "direct" trains in six hours and five minutes. This time might be shortened by one hour for a mail train; and the construction of a new curve at Amberein would prevent the necessity which at present exists for running into that station and out again. But I shall, in my calculations of time, continue to allow six hours five minutes for this journey.

The service by horses and mules from St. Michel over the Mont Cenis to Susa can be performed, during the summer season, with as much regularity as any other part of the route, but it is uncertain during the winter. The past winter was a mild one, and the service was performed with comparatively little interruption; but in looking through the returns with which the Italian Government have been so good as to furnish me, of the running of the Courier to Susa for the last six winters, I find that in January, 1863, the delays were both frequent and serious, in consequence of storms on Mont Cenis.

The Courier that left St. Michel on the 20th of that month did not reach Susa until the 22nd, as much as 48 hours 25 minutes having been occupied in the passage. On the 11th of March of the same year, 14 hours 30 minutes are recorded; but the Courier made the journey either on sledges or by diligence during the other five winters, in times varying from 7 hours 30 minutes as a minimum, to 12 hours and 35 minutes as a maximum. I have been informed that the Italian Government would willingly undertake the conveyance of 20 passengers and their luggage, besides mails up to 10 or 12 tons in weight, in eight hours between St. Michel and Susa, besides delays at these places of altogether 2 hours and 20 minutes, made up of 1 hour and 40 minutes at one end, and 40 minutes at the other end.

With regard to the summit railway over the Mont Cenis from St. Michael's to Susa I find that since my Report of the 12th June of last year, the trials on the experimental portion of line have been completed to the satisfaction of the French and Italian Governments, and that concessions were granted for the construction of the Railway (subject to the approval of the detailed plans) by the French Government on the 4th November, and by the Italian Government on the 12th December. That year was thus unfortunately lost for the works; and indeed the spring of 1866 has been principally occupied in preliminary arrangements, and in preparing plans, sections, and cross-sections on a scale of 1 in 500 for the two Governments. These plans had been authorised for 50 kilometres, while for the remaining 27 kilometres they had been prepared, and were awaiting authorization when I left St. Michel.

I observed in returning from Italy that tunnels and embankments for the rectification of the sharpest curves had been commenced, and were in active progress in six places on the Italian side of the mountain, and I learnt that two others were to be immediately commenced, the whole to be completed in, say, three months. The deviation along Napoleon's Road on that side, to avoid the well-known "escalier," was also to be commenced at once, and the masonry-covered ways, as a protection against the drift-snow and avalanches which have caused that road to be abandoned, were to be finished as well as other tunnels or masonry-covered ways within the next few months, though it was not intended that the timber-covered ways, which are to protect the railway from lighter drifts of falling snow, should be constructed till next summer. The rails on the Italian side (27 kilometres) have been contracted for in England, and 3,000 tons (of rails, chairs, fish-plates, &c) are to be delivered by the contractors, Messrs. Brogden & Company, between the 12th July and the end of September.

On the French side of the mountain, comprising 40 kilometres from Lanslebourg to St. Michel, and 10 kilometres from Lanslebourg to the summit, three bridges near St. Michel were far advanced, and were to be finished in six weeks.

A viaduct and two bridges near Fort Lessaillon were in progress, and were to be finished in two months. The deviations on this side are numerous, to avoid villages or sharp turns in the road. That at St. Michel was far advanced, and was to be completed in a few weeks. Those at Modane and Vernet were to be commenced shortly, and to be finished in little more than a month. That at Termignon, the heaviest piece of work on the French side, was on the point of commencement; and it was hoped that it might be completed in two months. That at Lanslebourg was to be commenced shortly, and completed in two months.

Of four deviations between Lanslebourg and the summit, one was finished, and three were in progress; and a less important one near Lanslebourg was not commenced. All these were to be finished in two months. The widening and levelling of the road in places, the rebuilding of retaining walls and abutments of bridges, were partly completed and partly in progress, and were expected to be finished in two months. The contract for the

rails, chairs, &c. for the French side had been undertaken by the "Terre Noire" Company of Lyons, under the obligation to deliver 1000 tons a month from the 1st July.

Out of 80,000 sleepers 50,000 had been purchased and 30,000 cut. Ballast was provided for 20,000 lineal metres, equal to 20 kilometres of permanent way, extending from St. Michel to four kilometres beyond Modane; and 15 to 20 kilometres of fencing had been prepared for erection, and were at once to be put up.

The precise details having been fixed upon, after much careful consideration for the engines, they have been contracted for, and are to be delivered, the 1st in December next; and the whole, 12 in number, by the 1st April, 1867. The tenders for the carriages were still under consideration. No. 2 engine has been strengthened in some of its parts since my visit of last year; and I tried some further experiments with it on the experimental line, both in ascending with a load, and in stopping suddenly, on a signal being given, in the descent.

I see no reason to alter the favourable opinion I have already expressed in regard to the principle involved, but every reason, on the contrary, to believe that it will be worked out to a successful issue. I have heard from Mr. Fell, since leaving the mountain, in a letter, dated 13th July, that he had been again, with two of the directors of the company, over the works; and that they had found them making good progress on the French side; but had thought it desirable to change the contractors on the Italian side, with a view to increased activity, and to ensure their completion this year. The new contractors have undertaken this obligation, and are to employ at least 1250 men on that side.

The printed prospectus of the company refers to the 1st May, 1867, as the date on which this railway is to be opened throughout from St. Michel to Susa for public traffic, and the calculations of the directors have been based upon that supposition; but to this end the line and works from Lanslebourg to Molaret, 27 kilometres over the mountain, must be completed before the mountain is covered with snow in the autumn of this year; and it cannot be doubted that every exertion will be made to complete and open the line, inasmuch as the profit of the company depends upon its early employment. They cannot count upon any paying traffic after the completion of the grand tunnel and the permanent line; and, indeed, their concessions hold good only up to the opening of that line for traffic.

In the original programme prepared for the French and Italian governments 4 hours and 30 minutes were allowed for the mail and express trains by the summit railway from St. Michel to Susa; but subsequent experiments have shown that this journey might be made in 4 hours. I shall still, however, allow  $4\frac{1}{2}$  hours for it, and I shall add three-quarters of an hour at each end for the transfer of mails and passengers, on account of the break of gauge; the gauge of the Mont Cenis Railway being  $3' 7\frac{1}{2}"$ , while that of the French and Italian railways is  $4' 8\frac{1}{2}"$ . I enclose plans of the arrangements proposed for running the summit railway into the stations at St. Michel and Susa. There would be cranes on the platform for transferring the mails across it from the one line to the other, and under these circumstances half an hour ought to be ample for the transfer; but I have preferred to allow a good margin, as above, so as to be well within the mark in my estimate of time.

Through the favour of the Italian government I walked into the headings at both ends of the Grand Tunnel, and I found that very considerable progress had been made during the previous year, in spite of the numerous difficulties which had been encountered.

At the Modane (French) end hard quartz rock had been found at 2,094.10 metres from the entrance, on the 13th June, 1865, and the heading had been driven through that rock for 198.90 metres up to the 9th May, 1866, making a total advance at that end, from the 9th May, 1865, of 302.75 metres, and from the commencement of the works, in the year 1857, of 2,293 metres.

At the Bardonneche (Italian) end the heading was progressing more rapidly, through the same schistose rock, which has been found at that end from the commencement; 772 metres had been pierced between the 9th May, 1865 and the 9th May, 1866, making a total advancement for that end of 3,361.50 metres.

The total progress at both ends for the year ending 9th May, 1866, was thus 1,074.75 metres, and the total amount pierced, with the heading, was 5,654.50 metres (about  $3\frac{1}{2}$  miles), out of 12,220 metres (about  $7\frac{1}{2}$  miles), leaving 6,565.50 metres (about 4 miles) to be pierced.

The greatest progress that was made in any one year by manual labour was 257.57 metres in 1858, at the Bardonneche end, while the progress by machinery has increased as follows:—

<i>Year.</i>	<i>Bardonneche.</i>	<i>Modane.</i>	
1861	170	—	103 by hand labour.
1862	380	—	243 ditto.
1863	426	376	
1864	621.20	466.65	
1865	765.30	458.40	

And the above figures for 1865, were, in spite of a severe attack of cholera at Bardonneche during the months of November and September, which seriously retarded the works at that end, and indirectly, also, those at Modane end; in spite of two accidental explosions, which tended greatly to alarm the workmen, one at the face of the excavation and the other outside the tunnel; and in spite of the quartz rock, encountered during the latter half of the year, at the Modane end.

The cholera, indeed, retarded the full-sized excavation, and the masonry lining at the Bardonneche much more than the heading, and much ground has to be made up in this respect.

Two extra water wheels are, however, being constructed at that end, in addition to the five already at work, for the improvement of the ventilation; and this being provided, there is no reason why, if money and labourers be forthcoming in sufficient quantity, this backward condition of the permanent work should not be made up.

The question, as to when the tunnel is likely to be completed depends principally upon (1) the thickness of the quartz, (2) the thickness and quality of the rock which is interposed between the quartz and the schistose rock of Bardonneche, and (3) the supply of money and labour. Unfortunately 400 men, and amongst them some of the best workmen, were leaving the tunnel works for the army whilst I was on the spot; and the financial condition of Italy, at present most unsatisfactory, must depend upon the duration of the present war. As quartz rock does not lie in strata with parallel sides, there can be no good reason for believing that the thickness of it, 500 metres, which has been observed on the surface of the mountain, will also be found at the level of the tunnel; and the question of its extent at that level must remain an element of uncertainty until it has been completely bored through.

The rock which succeeds it has been called compact limestone, and its thickness has been stated at 25,000 metres; but the engineers of the tunnel believe it to be gypsum, more easy to work than the schist of Bardonneche, or the anthracite rock of Modane, and 300 metres thick. Supposing an average distance of 800 metres a year to be pierced for the next five years, at Bardonneche end, and an average of 513.1 metres a year to be pierced during the same period from the Modane end, then the headings would be driven through so as to meet each other in five years from May, 1866, or by May, 1871; and the permanent tunnel might be completed, say, by the end of that year. But there are also the approaches to the tunnel to be constructed on the Italian side by the Italian Government, and on the French side by the Victor Emanuel, now the Paris, Lyons, and Mediterranean Railway Company. These approaches, comprising other tunnels and heavy works, and being altogether about 35 miles long, have not yet been commenced. The shortest time, looking at the matter solely in an engineering point of view, in which the permanent line can be completed, will be, therefore, as far as can be foreseen, towards the end of 1871; and it is impossible to calculate, at present, upon the future financial condition of Italy, and the effect it may have upon the progress of the works.

After the construction of the whole permanent line, the tunnel route will be an immense advantage to the mail traffic as well as to all other traffic between France and Italy, inasmuch as the break of gauge, and therefore change of vehicles and consequent inconvenience and delay, which must be incurred in the use of the summit line at St. Michel and Susa, will be avoided. The gradients will indeed be very steep, even on the tunnel line, there being a rising gradient from the French side, half way through the grand tunnel of 1 in 45½, and the steepest gradient on the line being 1 in 28.

But it may reasonably be expected that in a few years, and not long after 1871, mail trains will run through from Calais to Brindisi for 1,390 miles, without break of gauge, in about 54 hours.

The railway from Susa, *via* Turin, Alessandria, and Piacenza, to Bologna, forms part of the system of the Ferrovie dell'Alta Italia; out of 387 kilometres between Susa and Bologna, 253 are laid with a single, and 134 with a double line of rails, there being 90 miles of double line between Turin and Alessandria, and 44 (out of 147) between Piacenza and Bologna. Of the gradients, 2½ kilometres are between 1 in 70 and 1 in 100, and 39 kilometres are between 1 in 100 and 1 in 200, and the remainder are less steep than 1 in 200. Of the curves there is one with a radius of 500 metres, 819 metres long, between Piacenza and Bologna; and there are only two others, with a total length of 834 metres, which have radii of less than 600 metres; the permanent way differs in different parts of the line, and altogether 281 kilometres, out of 387, have the joints of the rails fished; dog-spikes only are used to secure the flat-bottomed rails (where these are employed) to the sleepers, as commonly on the Continent, though I observe that through-bolts are now being employed in place of them on the *Chemin-de-fer du Nord* of France. The fences are inefficient in many parts of the line, and an iron chain attached to two posts or a swinging bar frequently takes the place of gates.

It is not the practice to use either chock-blocks for the security of vehicles standing on the sidings, or indicators for the facing points, on the single line as in England.

The Company offer to run a mail train from Susa to Bologna in 7 hours 45 minutes including 40 minutes of stoppages at the various stations, which is 10 minutes less than the "direct" trains of the summer service; and from Bologna to Susa (the greater rise being in that direction) in 8 hours and 8 minutes, including the same total amount of stoppages. I shall adopt the latter figures, with 10 minutes added for stoppage at Bologna, in calculating the time for the whole journey.

The portion of the Strada Ferrata Meridionale or Meridional Railway of Italy, which lies between Bologna and Brindisi, is 763 kilometres long, and is laid with a single line throughout. It was opened for traffic from Ancona to Bologna in 1861, from Ancona to Pescara in 1863, to Foggia in April 1864, to Trani in August 1864, to Bari in February 1865, to Brindisi in May 1865; and, in continuation to Lecce in January 1866. There are excellent station buildings at 47 intermediate stations, mostly finished, but some in progress. There are crossing places and sidings at all of these stations, with a minimum length of 500 metres, and they are more than enough for all the traffic that can at present be expected. Good masonry houses (*case cantonieri*) have been constructed as in other parts of Italy, about a kilometre apart, for nearly the whole length of the line. There are four rooms in each for the accommodation of the platelayers and "guardians," and these men are, therefore, most of them always on the spot, and ready by day or night in case of need.

Out of the whole distance of 763 kilometres, 645 kilometres are quite straight. The sharpest curves, six in number, and of a total length of 4,080 metres, have radii of 400 metres. There are two curves of 450 metres radius, together 250 metres long, and there are 13½ kilometres of curves with radii of 500 metres, but the majority have radii of upwards of 600 metres. The steepest gradient is 1 in 67 for a short distance south of Ancona. There is no other gradient steeper than 1 in 100, and the greater part of the line (and that part more particularly between Foggia and Brindisi) may be considered, as regards curves and gradients, to be a first-rate running line. The permanent way is laid with rails of a flat-bottomed section in lengths of 5½ or 6 metres, weighing 37 kilogrammes per metre. The joints of the rails are fished throughout. The sleepers are laid transversely, about a metre apart on an average, from centre to centre, and are of oak, except for 188 kilometres between Monopoli and Lecce, where they are partly of oak and partly of beech. The rails are secured to the sleepers by means of dog spikes only, as in other parts of Italy and of the Continent generally. Such a fastening is not considered sufficient in this country, but these spikes have a far better hold in oak sleepers than in the fir or other sleepers of soft wood which we employ, and none of the curves are sharp on this line.

The bridges and viaducts generally appear to have been carefully and substantially constructed in brickwork, masonry, and iron. Of the bridges at Ninna, Massignano, Mero, Trivolo, Sangro, Orente, Asinello, Sinarca and Fortore, which are still in wood; that at Sangro, being more substantial than the others, will probably remain in its present condition for several years, while those at Ninna, Massignano, and Orente will be replaced by permanent bridges in two years, and the remainder within 12 months.

Much expense has been incurred since the line was first opened, and no necessary expense seems to have been spared in making the line secure against encroachments of the sea as at Vasto, or on soft ground; or in regard to the cuttings and embankments.

There are as yet no fences over a great part of the line, even where roads run near, or by the side of the railway; and, except at the most important level-crossings, there are no gates, a swinging bar or a chain on two posts being used, under the charge of a servant of the company, in place of them. But the absence of gates and substantial fences which is so frequently observable on the Continent does not appear, in spite of occasional accidents, to have been attended hitherto with the same bad results as in England, partly in consequence of the system which largely prevails of watching the beasts at pasture, and partly because they are most easily kept within bounds.

No fast service of trains has yet been run over this line, as there has not been traffic to justify the extra expense they involve; but the company undertake to run the whole distance from Bologna to Brindisi in 18½ hours, including altogether 1 hour and 22 minutes of stoppages at 17 intermediate stations, with mail trains. They have now 93 locomotive engines, besides 84 under construction; and 329 passenger carriages, besides 219 under construction.

In working this great length of single line, the telegraph only is employed to secure the safety of the trains, when they are not "in orario," that is to say, not running according to the printed time tables. Morse's instruments, by which all the messages are printed on slips of paper in dots and dashes, are those most in use; and they are worked under a good system by responsible men. There is at least a "direct" and an "omnibus" instrument at every station, and there are also instruments for practice at some of the stations. Any deviations from the usual crossing places of the trains are arranged between the station masters upon these instruments, and written instructions are given in such cases to the "*capo-conduttori*" (head guards) of the trains. All the *employés* at the stations are taught to work the instruments, and to understand them by the ear, as well as to read the printed slips. Special trains are now run over the line when required for royal and other trains at very short notice, and that which was placed at my disposal afforded an excellent illustration of the system. The company undertake willingly "to run an Indian mail" train special over the line at any time of the day or night, within two hours after the arrival of the steamer from Egypt, in 18½ hours; and they do not at all object to any disarrangement of their ordinary traffic, which may be necessary for that purpose.

The outward mail from London might be expected to run through to Brindisi at stated times, and there would be no occasion for a special irregular service in that direction; but the homeward mail could not, as I took occasion to point out, be timed to any particular hour at Brindisi. And the Italian Government, as well as the railway companies, offer, therefore, to send the homeward mail through by a special train to St. Michel, so that no delay need occur in Italian territory. After the Egyptian steamer had been signalled off Brindisi the telegraph would to this end be employed to give notice of the hour at which the Eastern mail train would leave each station to St. Michel; and even to Calais and London. I am authorised further to state that the Italian Government would be willing to perform this service according to the times proposed by the railway companies, that is to say, in 18½ hours between Brindisi and Bologna, in 7 hours 45 minutes one way, and 8 hours 5 minutes the other way between Bologna and Susa; with 8 hours for the passage of the Mont Cenis, besides altogether 2 hours and 20 minutes delay at Susa and St. Michel, at the rate of 0·75 lire or 75 centimes per ounce of letters, and the same per kilogramme (or 0·33975 lire per English pound) of printed papers. These terms, which are very considerably less in proportion to the distance than is paid by Her Majesty's Government for the passage of the mails through France, appear to me to be exceedingly moderate.

The Italian Government would also be willing to undertake the sea service from Brindisi to Alexandria with their contract steamers of the Adriatico-Orientale Company, either on a similar system of charges, or for a lump sum within specified weights. The figures that were at first given to me for the sea service were 0·50 lire (50 centimes) for each English ounce of letters, and the same for each kilogramme of printed matter, but I was subsequently informed that if the British Government had really an idea of entrusting the sea service to the Italian Government, and were inclined to make a positive offer for it, either a tariff of 0·30 lire (30 centimes) for each ounce of letters and each kilogramme of printed papers, or a lump sum of 3,000 lire per voyage for weights of mails not exceeding 12 tons as a maximum or 4 tons as an average going and returning, might probably be accepted. This charge was considered to correspond to nearly 11 lire per league of voyage, or a third of what the Italian Government pay to the contractors, Messrs. Palmer & Co., for the mail steamers from Brindisi to Alexandria.

In comparing the route *via* Marseilles with that *via* Brindisi to Egypt, as regards the time occupied, it will only be necessary, as both routes go together to Macon, to make that station the common point of departure.

The following may be taken as the time occupied by the existing route:—

	Hours.	min.
From Macon to Marseilles .....	10	43
Transfer mails at Marseilles .....	2	0
Marseilles to Alexandria 1,460 nautical miles, including four hours' detention at Malta .....	150	0
Macon to Alexandria .....	162	43

And the following would be the time for the Brindisi route, if the passage were made by horses and mules over the Mont Cenis:—

	Hours.	min.
Macon to St. Michel .....	6	5
Delay at St. Michel .....	1	40
Passage of Mont Cenis to Susa .....	8	0
Delay Susa .....	0	40
Susa to Bologna .....	8	8
Delay at Bologna .....	-	10
Bologna to Brindisi .....	18	30
Transfer mails at Brindisi .....	2	0
Brindisi to Alexandria, 822 nautical miles .....	82	15
Macon to Alexandria .....	127	28

For the Brindisi route by the summit railway over the Mont Cenis, when that shall have been completed, the time would be—

	Hours.	min.
Macon to St. Michel .....	6	5
Delay at St. Michel .....	0	45
St. Michel to Susa .....	4	30
Delay at Susa .....	0	45
Susa to Bologna .....	8	8
Delay at Bologna .....	0	10
Bologna to Brindisi .....	18	30
Transfer mails to steamer at Brindisi .....	2	0
Brindisi to Alexandria, 822 nautical miles .....	82	15
	<hr/> 123	<hr/> 8

Again, when the tunnel through the Alps and the permanent line in connection with it are complete, the delays at St. Michel and Susa will be avoided, and the journey between these places may be performed without break of gauge, or change of vehicles, including stoppages, in 3 hours. There will, therefore, be an advantage of  $35\frac{1}{2}$  hours in favour of the Brindisi route previous to the construction of the Mont Cenis Summit Railway; of  $39\frac{1}{2}$  hours after the construction of that railway; and of  $42\frac{1}{2}$  hours after the completion of the permanent tunnel line from St. Michel to Susa.

In communicating with the Italian Government, and with the officers of the Italian railways, I have pointed out that, in laying down the periods of time on which the above calculations have been made, it was desirable to fix, not the shortest time in which the journeys could be performed, but such rates of speed as would admit of punctuality. And I believe that in the above figures a sufficient margin has been left to cover any accidental delays that may occur, to a moderate extent, on so long a journey. I am of opinion, further, that the time may be kept with greater certainty *viâ* Brindisi than *viâ* Marseilles, because—(1) land transit generally may be performed more punctually than sea transit—(2) the sea passage would be less stormy and more certain, inasmuch as the worst part of it, across the Gulf of Lyons, would be avoided—(3) there would be a special railway service through Italy.

But, in order that all the advantages of this route might be realized, it would be desirable that arrangements should be made by which the special service *from* the East should be continued also through France.

Some further time might also be saved in both directions if the mail trains could be timed to run through from Calais, stopping, say, one hour only at Paris, and making use of the railway which connects the Northern and Mediterranean lines together for avoiding a change of vehicles in that city.

With reference to these subjects, I am happy to be able to inform your Grace of the cordial promise of general co-operation which I received at Paris from M. Vandal, the Director-General of the French Posts. I had the advantage of conferring with M. Vandal, both in going to and returning from Italy; and when I informed him, on the latter occasion, of the result of my journey, of the amount of time that could be saved, and the price at which the Italian Government were willing to perform the service, M. Vandal replied at once that the question was virtually decided. He observed that such an improved means of communication would advance the important interests of the French Empire in connection with the East, as well as our own; and he begged me to assure Her Majesty's Government of his readiness to afford every assistance in furthering this object.

Under all the circumstances of the case, I am of opinion that the route *viâ* Brindisi may properly be adopted for the Eastern Mail Service, as affording greater advantages at the present time than any other route; and further that it might be brought into operation by the 1st June, 1867. It is probable that the Mont Cenis Railway will be opened for traffic before that time, and even if such should not be the case, there would still be no difficulty as regards the passage of the mountain by horses and mules until the autumn; and I cannot doubt that the summit railway will be complete and working, at all events, before the following winter.

It will thus be possible next year to convey the Eastern mails between London and Alexandria punctually, and without difficulty, in  $150\frac{1}{2}$  hours, and at some time after 1871, when the permanent line between St. Michel and Susa is at work, in  $147\frac{1}{2}$  hours. The longest portion of the journey that can be made at present, or next year, without change of vehicle, is from Susa to Brindisi, 716 miles, or 27 hours; but it may be expected, when the tunnel line is completed after 1871, that mails and passengers will travel, without change of vehicles between Calais and Brindisi, 1391 miles in 54 hours, or, if the arrangement above referred to, of using the connecting railway at Paris, be adopted, in 52 or 53 hours. In either case it is exceedingly desirable that sleeping carriages with proper conveniences should be provided for the journey. I have not failed to represent this want to the Italian Government and railway companies, and I am happy to be able to inform your Grace that the Italian Government undertakes to convey the passengers in special carriages of this description at fares not exceeding, for each, 15 centimes per kilometre. In the meantime, the mails must necessarily be transferred, if not at Paris, at all events from the  $4' 8\frac{1}{2}"$  to the  $3' 7\frac{1}{2}"$  gauge, and *vice versa*, at St. Michel and Susa; and with a view to this being more easily effected, as well as to facilitate the transfers on the remainder of the whole route, I would venture to suggest that some improvements might be made in the system of packing them.

The average number of boxes of wood or iron forwarded by the mail of the 26th of each month, through France to the East, is now 325, with a gross weight of 9 tons 14 cwt. 2 qrs. 21 lbs., and a gross cubic content of 1178 feet; and each of these boxes is now thrown down with great violence, perhaps on stone or iron, whenever a transfer is made: 1st, from the "left" at the General Post Office to the Post Office van; 2d, from Post Office van to the railway station in London; 3d, from the train to the steamer at Dover, and so on. I understand that the attempt has already been made to substitute bags for boxes, but that it was given up, when the cholera was raging last year in Egypt, because the bags were supposed to harbour infection more readily than the boxes. But I apprehend that this objection might be got over if the bags were enclosed in water-tight wooden chests of larger dimensions. The places of transfer being always the same, these chests might be moved by cranes, from the General Post Office to the street, from the street to the railway, from the railway pier to the steamer, and so on. And the hatchways of the steamers employed might be fitted to receive them without any difficulty, whatever the precise form and size decided upon. A great saving would thus be effected, in the weight, the cost, and the wear and tear of the cases, as well as in the time consumed in making the

cases up, in making lists of them during the transfers, and in transferring them. And there would probably be less risk of loss. A truck on the Mount Ceniz Summit Railway would not, of course, take so many of these large chests as one on the ordinary railways.

As I have intimated at the commencement of this Report, the question to be now solved is solely that of communication through Europe to the east of the Mediterranean. But in saying so much concerning the postal routes to the East, I would ask your Grace's permission to touch also upon the still more important saving of time and distance that may be obtained hereafter by avoiding the passage of the Red Sea, where a railway shall be constructed from the coast of the Mediterranean along the Euphrates Valley to the Persian Gulf. By this route many hundred miles of distance, and many days of time, might be saved between London and Bombay, which will become within the next two years (when the railways to Madras and Calcutta are completed) the principal port of India. The navigation by the Persian Gulf to Bombay will be far preferable to that *via* Suez and the Red Sea to Bombay; and even that amount of navigation may ultimately be avoided by the connection together of Bagdad and Bombay by railway. But in the meantime the Euphrates Valley scheme has been for many years almost in abeyance. The mere guarantee of the Turkish Government has not been found sufficient even to render the construction of the first portion from the coast to Aleppo practicable; and the financial state of that empire renders progress now all but impossible. But I have so strong a conviction of the important bearing that the construction of such a railway would have, commercially and strategically, upon the British Empire, that I could not but take this opportunity of recommending the subject to the serious consideration of Her Majesty's Government.

I have, &c.,

(Signed) H. W. TYLER, *Captain Royal Engineers.*

*His Grace the DUKE OF MONTROSE,*  
*Postmaster-General.*

*Colonial Treasury, 15th December, 1866.*

#### MEMORANDUM.

IN returning to Your Excellency the Secretary of State's Despatch of 22nd September last, on the subject of Postal Communication between this Colony and Great Britain, I have to remark that Ministers are fully alive to the importance of maintaining a thoroughly efficient Mail service by means of fast steamers *via* Melbourne and Ceylon; and I would submit to Your Excellency the propriety of informing the Secretary of State that the Government of Victoria has invited the Government of Tasmania to send a Delegate to Melbourne in the month of February next, to meet Delegates from the Australian Colonies and New Zealand, to discuss fully and settle a scheme of Postal Communication between the Australian Colonies and Great Britain *via* Ceylon and Suez, and that this Government has accepted such invitation, and will send a Delegate accordingly. Ministers hope that the Conference in Melbourne will result in the establishment of a thoroughly efficient Mail Service, by fast steamers, once every four weeks at least, or perhaps once a fortnight, from Melbourne *via* Ceylon, to meet the India Mail Service at Point de Galle.

THOS. D. CHAPMAN.

*His Excellency the Governor.*

*Chief Secretary's Office, Melbourne, 26th November, 1866.*

SIR,

THE Lords Commissioners of Her Majesty's Treasury having intimated, by Minute dated 4th September, 1866, the intention of the Imperial Government to direct that the necessary steps should be taken for terminating the existing Contracts for the Conveyance of Mails between Great Britain and India and Point de Galle and Sydney, and their Lordships having also expressed a strong desire that any new Contract for the Branch Service by which the Australian Mails may be forwarded should be under the joint control of the Colonies interested in the Service, I have the honor, by direction of His Excellency Sir J. H. T. Manners-Sutton, to state that this intelligence appears to the Government of Victoria to afford an additional reason to those already urged in the correspondence that has taken place on the subject in favour of a Meeting of Delegates from the several Colonies for the full discussion of all matters connected with Steam Postal Communication, in order that the whole question may be settled on equitable grounds for the common good.

I have, therefore, the honor to suggest that such a meeting should be arranged to take place on an early date; and that the gentlemen who may be appointed to the duty may be invested with full powers, as it is of the highest importance that the decision of the Colonies on the question remitted to them by Lord Carnarvon should be arrived at, and communicated, with the least possible delay.

I would also suggest that Melbourne would, on account of its central position, be the most eligible place of meeting.

A similar communication has been addressed to the Governments of New South Wales, New Zealand, South Australia, Queensland, and Western Australia.

I have the honor to be,  
Sir,

Your obedient Servant,

JAMES M'CULLOCH.

*The Honorable the Colonial Secretary, Tasmania.*

*Tasmania, Colonial Treasury, Hobart Town, 10th December, 1866.*

SIR,

I HAVE the honor to acknowledge the receipt of your letter of the 26th ultimo addressed to the Honorable the Colonial Secretary, and in reply I have the honor to inform you, by direction of His Excellency Colonel Gore Browne, that the Government of Tasmania will be prepared to take into consideration any proposals made by the Government of Victoria for maintaining Steam Postal Communication between Melbourne and Great Britain *via* Ceylon; and, in compliance with the suggestion contained in your letter above referred to, I have also to state that His Excellency Colonel Gore Browne will be prepared to send a Delegate to Melbourne to take part in the discussion of this subject at a Meeting of Delegates from the Australian Colonies and New Zealand at such time as your Government may fix for that purpose. With a view, however, to this Government being placed in a position to give full instructions to its Delegate, I have to request that you will, as early as convenient, be good enough to inform me whether your Government contemplate proposing to the Imperial Government the establishment of a Mail Service providing for the despatch of Mails every fourth week, as suggested by the Lords of the Treasury, or whether your Government contemplate the establishment of a Service providing for the despatch of Mails every fortnight, as also suggested by the Lords of the Treasury.

The Government of Tasmania has cheerfully contributed its quota towards the cost of the Monthly Service hitherto subsisting, and will be prepared to recommend to Parliament an annual contribution sufficient to make good its share of the cost of a Service providing for the despatch of Mails from England and Australia every fourth week; but the Government of Tasmania is not at present prepared to recommend to Parliament an annual grant sufficient to defray the share of the cost of a Service once a fortnight. When, however, this Government is in possession of further information, showing the probable amount which this Government would be called upon to contribute towards the cost of a Service providing for the despatch of a Mail from England and Australia every fortnight, they will be prepared to consider the same; and if the cost of such a Service is not too large, they would submit the same to Parliament for consideration.

This Government is fully alive to the necessity and importance of a thoroughly efficient Mail Service being maintained by fast steamers running between Melbourne and Ceylon; and in any arrangement that may be made they confidently rely on the Government of Victoria giving their support to such a plan.

The Parliament of Tasmania will meet on the fifteenth of January, and will probably remain in Session till the end of that month. It is desirable, therefore, that this Government should be prepared to submit to Parliament for consideration any new scheme for Postal Communication during that Session. I hope, therefore, you will favour me during the present month with the views and proposals of your Government in regard to a four-weekly or a fortnightly Service, together with a memorandum showing the probable cost of each Service.

I have the honor to be,  
Sir,

Your obedient Servant,

THOS. D. CHAPMAN.

*The Honorable the Colonial Secretary, Melbourne.*

*Chief Secretary's Office, Melbourne, 9th January, 1867.*

SIR,

I HAVE the honor to acknowledge the receipt of your letter, dated 10th ult., respecting the maintenance of Steam Postal Communication between Australia and Great Britain, and adverting to the Conference proposed to be held upon the subject at Melbourne by Delegates from the several Australasian Colonies.

With reference to the questions raised in your letter as to the despatch of Mails every fourth week or every fortnight, and the probable cost of such services, I would beg to state that, until the views of the different Governments to be represented at the proposed Conference are ascertained, it will not be possible to submit for the consideration of the Imperial Authorities any new Postal scheme, or estimate the cost which the Colonies entering into a concerted arrangement would be called upon to bear.

I will further advise you respecting the date of assembling of the Postal Conference to which it is intimated your Government will send a Delegate.

I have the honor to be,  
Sir,

Your obedient Servant,

JAMES M'CULLOCH.

*The Honorable the Colonial Treasurer,  
Hobart Town.*