

Mhs 6429

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
GENERAL.

To

04 5739/12

No. 812G.

Dated Simla, July 8, 1884.

Received

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B/A 193450/8/84

Forwards copy of despatch and enclosures from the Secretary of State, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and requests that great care may be taken in the selection of officers to be sent to England for practical training.

No. 27, dated India Office, London, 15th May 1884.

From—The Secretary of State for India,
To—The Government of India.

PARAGRAPH 1.—In continuation of my Public Works letter, No. 36, dated 21st June 1883,
* Letter from Sir A. Taylor, dated 23rd April 1884, I now transmit, for the information of your Excellency's Government, copy of correspondence* and enclosures. which has recently passed between Sir A. Taylor and this office, in respect to the results of the practical instruction of the two Native Assistant Engineers, * * * who came to England in 1883.

2. Your Excellency will observe from Sir A. Taylor's letter and its accompaniments that although the reports of their study of water-works during their first six months of residence in this country were favourable, the subsequent reports of their studies of architecture and construction of locomotives are unsatisfactory.

3. As it appears that they are very desirous to return to India at once without completing the two years' course for which they came to England, I considered that under the circumstances, and for the reasons given by Sir A. Taylor, it would not be desirable to insist upon their remaining. I have accordingly decided to allow them to return in the manner and by the routes desired by themselves. * * * will travel by way of America and Japan, rejoining his duties in India in the middle of October, and receiving pay until the 15th September, the date at which he might have reached India had he gone direct, and thenceforward being on leave without pay. * * * will go direct, and will arrive in India about the end of August.

4. This first experiment of permitting Native Engineers to visit this country with the view of gaining knowledge and experience in matters connected with their profession cannot be pronounced to have been successful, and it suggests the necessity of reconsidering the conditions under which they should be selected in future.

No. 120, dated Coopers Hill, 23rd April 1884.

From—GENERAL SIR ALEXANDER TAYLOR, K.C.B.,
To—The Under-Secretary of State for India.

PUBLIC WORKS letter No. 1979, dated 9th November last, conveyed Lord Kimberley's approval to the two Native Assistant Engineers, * * * devoting six months to the study of architecture under the personal instruction of Mr. Spiers.

They have been engaged in accordance with these instructions since November last. For five days in the week they have studied architecture, and have spent the other two days at the workshops of the Great Eastern Railway Company at Stratford, near London, under the general supervision of Mr. O'Callaghan, a distinguished and experienced Superintendent Engineer of the Indian Public Works Department, who is assisting me in superintending those Assistant Engineers lately appointed from the College, who are undergoing a short course of practical engineering in this country. Mr. O'Callaghan has also, on a few occasions, inspected the work they had done for Mr. Spiers.

Recently I have thought it well to obtain from Mr. Spiers and also from Mr. O'Callaghan specific reports on the progress so far made. These reports I have now the honour to submit in original (return requested).

They are not what I had hoped for. Mr. Spiers is disappointed. The results he had anticipated have not been accomplished. But it is important to notice that he does not attribute the failure to secure a full measure of success so much to the Lallas being wanting in industry, for he says, "they have taken an interest in their work, and have been industrious, though slow," as to their being much less skilful draughtsmen than he had been led to expect.

And I would remark that this is a source of disappointment to which we shall always be liable in endeavouring to teach architecture to Engineers to whom skill in drawing is by no means the vitally essential qualification that it is to architects.

Neither is Mr. O'Callaghan satisfied. The object with which both Assistant Engineers were sent to the Stratford workshops was explained in paragraphs 5* and 6 of my letter No. 101, dated the 19th October 1883, to be to enable them to acquire a good knowledge of engine and machine fitting, a kind of knowledge likely to be useful to them in their future career, and which they themselves expressed a warm desire to acquire. But this object they appear to have lost sight of, and, while attending the works, I believe, with regularity, to have employed their time there in a way which was not in accordance with the instructions they received.

The Secretary of State will remember that * * * soon after their arrival in the country, reported themselves in May 1883 to Mr. Binnie, and studied the Bradford waterworks of which Mr. Binnie is Engineer, under his guidance; that they visited many of the chief engineering works in the north of England with his advice and assistance, finally leaving Bradford in September 1883, and bringing with them from Mr. Binnie a very favourable, indeed complimentary, report. That they then in November took up machine and engine fitting at Stratford; and architecture under Mr. Spiers, with whom they are still working. And as they have not secured favourable reports on their winter's work, the Secretary of State will probably desire to have before him the full text of Mr. Binnie's favourable report on their work with him. A copy of this report I accordingly submit herewith.

The engagement made with Mr. Spiers will come to an end in less than a month, and it has to be considered what it will be best then to do with both Assistant Engineers.

I have asked them to state their wishes on this head, and find that they both most heartily desire to return to India. It is not perhaps necessary that I should enter into a detail of the reasons influencing them. It is easy to see that in the case of Hindus keeping within their caste rules, and with a staff of Indian servants attending on them, a prolonged residence in this country, with ways so novel to them all, must be attended with many very irksome difficulties.

* * * asks permission to leave England about the 1st June next, rejoining his duties in India in the middle of October. He wishes to be allowed to travel *via* America and Japan, and is willing to bear all expenses that may be in excess of the sum it would cost Government to send him back by the route by which he came. He begs, however, the favour of being advanced the passage money that Government would have to pay if he returned direct, and his pay for the four months which the journey would occupy.

* * * requests to be allowed to return direct to India, leaving England in the first week in August, and he proposes to employ the time after leaving Mr. Spiers in visiting important Engineering works in this country, and buildings of architectural interest on the Continent.

There remain the three Native servants, whose passages to England Government paid. No doubt their passages back will similarly be paid.

The Secretary of State will perhaps desire that I should state the course I would recommend. My opinion is that, seeing how earnestly both the Assistant Engineers desire to return to India this summer, it is undesirable to detain them longer.

I think that they might turn a month or six weeks to good account, after leaving Mr. Spiers, in inking in and completing the studies made in pencil while with him, and in visiting carefully such buildings in London as he may recommend. After that it would be best, in my judgment, to let them return to India without delay.

I do not believe in much good being likely to result from butterfly visits, either to large engineering works in England or to buildings of architectural interest on the Continent. The impressions thus hastily made cannot be expected to be other than superficial; useful knowledge is not to be acquired in this easy way.

I would draw attention to * * * application to be allowed to go back to his duties *via* America and Japan.

Dated Carlton Chambers, 12, Regent Street, March 1884.

From—R. PHENE-SPIERS, Esq., F.S.A.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., President of the Royal Indian College, Coopers Hill.

In accordance with your request conveyed to me through Mr. O'Callaghan, I beg to report that the course which I laid down for the instruction of * * * in architectural design has been carried out more or less as suggested. The progress made, however, has been comparatively slow, owing to their extremely weak draughtsmanship; this was, in fact, one of the first defects I found out, and in answer to my inquiries whether they had ever learnt drawing at all, they explained to me it was so many years ago that they had forgotten all about it—a singular confession for Engineers to make. I trusted, after a time, that their former acquirements in this respect might return, and to a certain extent this has happened; but, even now, their drawings seem to me to be inferior to those of the students at Coopers Hill. Their studies in design have been, therefore, materially delayed in consequence of their being unable to express their ideas in drawing. I was at one time inclined to insist that every design should be completed before I gave another subject; they pointed out to me that the acquirements of the principles of design were more important to them now, and that they could finish their drawings at their leisure afterwards in India. I gave way, therefore, until I found out through Mr. O'Callaghan that they intended to hand over these drawings to Native draughtsmen to finish in ink (an idea which would be repugnant to an English student who had any interest in his own work), and then I insisted on their completing some of their designs. I understand they propose to take these down to you next week.

An important consideration now presents itself: less than two months remains of the original term agreed upon for their instruction. It is quite certain I shall never make good draughtsmen out of them, though, in this respect, * * * is much better than * * *; and when I say draughtsmen, I mean careful, accurate draughtsmen, and not artistic. I have no complaints to make of them; they are industrious, though slow; they are interested in their work, and show great intelligence in following my arguments, though in the application of the principles laid down they frequently fail, sometimes from sheer carelessness, sometimes from want of power of drawing. This carelessness of which I speak and disinclination to take trouble to arrive at what they seem to think are small matters are quite peculiar to them. I do not remember ever to have noticed the same defect (at all events not to the same extent as in * * *) in any of the two or three hundred students who have passed through my school at the Royal Academy.

A great portion of my time has been occupied in teaching them how to project features on plan, section, and elevation, which they as Engineers ought to have known better how to teach me. They seemed to have forgotten all about the elementary problems of intersections of cones, cylinders, and spheres, which, I presume, formed a part of their earlier courses of study. They say that they could set the construction of such features out on the works if such were ever required, and that may possibly be the case. I have known foremen of works who could set out the most complicated problems of vaulting, but whose draughtsmanship on a small scale was deplorable. Foremen, however, are not called upon to design, and this is the chief difficulty which presents itself with * * *; they seem to think that because, having a retentive memory, they are able to recollect and could probably pass a good examination in writing about what I have told them, nothing more is required excepting to set some Native draughtsman to work out designs from their description—an idea which, of course, is quite illusory. They might be able to describe a palace in writing and unable to design and draw even a pigsty.

I think it may be advisable that, in June and July, they should travel either in England or Italy to study existing buildings and make sketches and notes, and I am now laying down routes for them to take in London, where they will find interesting and useful examples of architecture.

Dated 18, Shorncliffe Road, Folkestone, 5th April 1884.

From—J. L. O'CALLAGHAN, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., R.E.

In compliance with your request I send the following report on the two Native Engineers now studying in England.

When I took charge of the practical course they had just come up to London from Bradford, and were supposed to be attending the works of Messrs. Westwood, Baillie and Company. Arrangements were being made for a course of instruction in architecture under Mr. P. Spiers, and they having expressed a wish to spend a portion of their time in locomotive shops, it was settled that they were to spend two days a week at the Great Eastern shops at Stratford.

Mr. Spiers has, I believe, sent you a report on them, and I need only add that I was disappointed in their work under him. They seem to me to have misunderstood the object of their visit to England, and so soon as the novelty wore off they failed to work with the zeal they at first displayed.

In the locomotive works they have seen a good deal, but have not made many notes or sketches, giving as an excuse that the Locomotive Superintendent objected to their making sketches. It, however, turned out that what he objected to was only what from the first he said he would not allow, *viz.*, the making copies of drawings in his office. Instead of sketching simple useful appliances they wished to copy drawings of complicated hydraulic machinery which could not be of any future use to them. This naturally was objected to.

Their sole desire now seems to be to return to India, and I fear it would not lead to any useful result if they are compelled to remain in England for another year.

It will be impossible to ascertain the amount of information they have acquired until they are again at work in India, but I fear a good deal of what they have learned is only superficial.

Dated Waterworks Engineer's Office, Town Hall, Bradford, 24th July 1883.

From—ALEXANDER R. BINNIE, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.S.I.

Now that * * * have been with me for some time, I feel sure that you would like to hear how they are getting on, as well as my opinion on the probable usefulness of such instruction as they are receiving.

In the first place, I would remark that, coming as they do to this country after a good theoretical education, ten years' practical experience in the Public Works Department in India,

and above all with a thorough determination to learn all they can, that they have made great progress in acquiring a good knowledge of waterworks engineering, and I may say that I am very pleased indeed to be able to report most favourably of them in every way.

Now that they have received a good general insight into our waterworks at Bradford, I have made arrangements with some of my professional friends to enable them to visit similar works at Leeds, Edinburgh, Glasgow, Manchester, Liverpool, and Halifax, after doing which I think that they will have acquired as much insight as is possible into our English system of water-supply.

During their stay at Bradford I have taken many opportunities of showing them all that relates to the iron and textile manufactures of the district, as well as taking them over our drainage and sewerage and gasworks.

The tour of the above works, I think, may occupy about another month or six weeks, when, looking to the further insight which it is desired they should obtain into architectural practice, I think they might pass with advantage into other hands.

I say this, not with any desire to relieve myself of any further responsibility, or to curtail the period of six months for which they were originally sent to Bradford, but because I do not think any good can possibly accrue to Government or to themselves by keeping them longer engaged on office work, or in the drudgery of the details of levelling and measuring up on works, all of which are duties with which they are perfectly familiar.

I can assure you that their visit to Bradford has been a source of great pleasure to me, and I am sure of still greater advantage to the gentlemen themselves.

If I might be permitted to offer an opinion, I would suggest that in future Government would obtain the object it has in view by throwing them, under proper advice, on their own resources, and allowing them to travel about to works scattered over the country rather than by placing them for any lengthened period in one place.

By this course they would attain a more enlarged experience, and avoid the risk of falling into one narrow professional groove, which is always to be avoided.

I find that they are naturally anxious to return to India at as early a date as possible, and that they have a great desire to return home after a year in this country *via* America, Japan, and China, and that they are themselves prepared to defray all the expenses of the homeward journey by that route.

To my mind the expression of such a desire is one of the best proofs I can give of the advantages of the experiment Government is now trying in their particular case; for there can be no doubt that the enlarged experience and cultivation afforded by foreign travel will do much, both directly and indirectly, to educate the gentlemen in question, and through them their friends in the Department in India.

In conclusion, I may remark that they are gentlemen who, I feel sure, can be trusted and that Government, I am sure, will benefit by trusting them as far as possible in completing their own education, a subject which, I know, they have fully at heart.

No. 739-84P.W., dated India Office, 14th May 1884.

From—J. K. Cross, Esq., India Office, London,

To—The President, Coopers Hill College.

I AM directed to acknowledge the receipt of your letter No. 120, dated 23rd April, reporting on the progress made in their studies by the two Native Assistant Engineers. * * * now under practical instruction in this country.

Lord Kimberley regrets to learn from your letter that, although the report of their study of waterworks during their first six months' residence in this country was a favourable one, the subsequent reports of their progress in studying architecture and machine and engine construction are unsatisfactory.

As it appears that they are unwilling to complete the two years' course of study for which they came to England, and are extremely desirous of now returning to India, and as in your opinion it would be best to let them do so, I am to request that you will inform them that permission to return to their duties in India is accorded them; * * * being granted the equivalent of his passage out, with sanction to his proceeding *via* America and Japan, receiving pay until the 15th September, the date at which he might have reached India, had he gone direct, and thenceforward being on leave without pay until his arrival in India, and * * * being allowed to proceed direct to India on or about the 1st August. The interval of time during which they may remain in this country can be spent in the manner suggested in your letter under reply.

The necessary communication will be made to the Government of India regarding the approaching return of these officers to their duty.

No. 812G.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL.

To

THE GOVERNMENTS OF MADRAS, BOMBAY, BENGAL, THE NORTH-WESTERN PROVINCES AND OUDH, AND THE PUNJAB, PUBLIC WORKS DEPARTMENT.

THE CHIEF COMMISSIONERS OF THE CENTRAL PROVINCES, BRITISH BURMA, ASSAM, AND COORG.

THE RESIDENT AT HYDERABAD.

THE AGENTS TO THE GOVERNOR GENERAL FOR CENTRAL INDIA, RAJPUTANA AND BILUCHISTAN.

THE DIRECTOR GENERAL OF RAILWAYS.

Simla, July 8, 1884.

SIR,

ADVERTING to previous correspondence on the subject of the practical training in England of Native Engineers, I am directed to forward copy of a despatch from the Secretary of State, No. 27 P. W. of 15th May 1884, and enclosures, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and, with reference thereto, to request that great care may always be exercised in the selection of officers to be sent to England for practical training, the officers selected being made most clearly to understand what description of training is before them, and what the inconveniences to them of life in England may be.

I have the honor to be,

SIR,

Your most obedient Servant,

A. B. SAMPSON,

Under Secretary.

Documents accompanying.

Copy of despatch and enclosures referred to,

to Mr. G. 27 W 21-3-83
to Mr. 22 C 9-1-84
to Mr. 633 K W 7-3-84
634

The Hon. Mr. C. Sullivan
The Rt. Hon. the Governor

No. 1934 W of 8th August/84

Recorded, with
reference to G.O. No.
633. W of 7th March/84.

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W. W.

28-7-84



24/8/84

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PUBLIC WORKS DEPARTMENT.
GENERAL.

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No. 812G.

Dated Simla, July 8, 1884.

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G. C. B. Press, Simla.--No. 103 P. W. D.--14-7-34--220.

with order

24/8/84

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6-24-7-84

No. 812G.

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SIR,

Your most obedient Servant,

W. H. Simpson

Under Secretary.

Documents accompanying.

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P. W. Dept.*

6 spare copies

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Dated 18, Shorncliffe Road, Folkestone, 5th April 1884.

From—J. L. O'CALLAGHAN, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., R.E.

IN compliance with your request I send the following report on the two Native Engineers now studying in England.

When I took charge of the practical course they had just come up to London from Bradford, and were supposed to be attending the works of Messrs. Westwood, Baillie and Company. Arrangements were being made for a course of instruction in architecture under Mr. P. Spiers, and they having expressed a wish to spend a portion of their time in locomotive shops, it was settled that they were to spend two days a week at the Great Eastern shops at Stratford.

Mr. Spiers has, I believe, sent you a report on them, and I need only add that I was disappointed in their work under him. They seem to me to have misunderstood the object of their visit to England, and so soon as the novelty wore off they failed to work with the zeal they at first displayed.

In the locomotive works they have seen a good deal, but have not made many notes or sketches, giving as an excuse that the Locomotive Superintendent objected to their making sketches. It, however, turned out that what he objected to was only what from the first he said he would not allow, *viz.*, the making copies of drawings in his office. Instead of sketching simple useful appliances they wished to copy drawings of complicated hydraulic machinery which could not be of any future use to them. This naturally was objected to.

Their sole desire now seems to be to return to India, and I fear it would not lead to any useful result if they are compelled to remain in England for another year.

It will be impossible to ascertain the amount of information they have acquired until they are again at work in India, but I fear a good deal of what they have learned is only superficial.

Dated Waterworks Engineer's Office, Town Hall, Bradford, 24th July 1883.

From—ALEXANDER R. BINNIE, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.S.I.

Now that * * * have been with me for some time, I feel sure that you would like to hear how they are getting on, as well as my opinion on the probable usefulness of such instruction as they are receiving.

In the first place, I would remark that, coming as they do to this country after a good theoretical education, ten years' practical experience in the Public Works Department in India,

and above all with a thorough determination to learn all they can, that they have made great progress in acquiring a good knowledge of waterworks engineering, and I may say that I am very pleased indeed to be able to report most favourably of them in every way.

Now that they have received a good general insight into our waterworks at Bradford, I have made arrangements with some of my professional friends to enable them to visit similar works at Leeds, Edinburgh, Glasgow, Manchester, Liverpool, and Halifax, after doing which I think that they will have acquired as much insight as is possible into our English system of water-supply.

During their stay at Bradford I have taken many opportunities of showing them all that relates to the iron and textile manufactures of the district, as well as taking them over our drainage and sewerage and gasworks.

The tour of the above works, I think, may occupy about another month or six weeks, when, looking to the further insight which it is desired they should obtain into architectural practice, I think they might pass with advantage into other hands.

I say this, not with any desire to relieve myself of any further responsibility, or to curtail the period of six months for which they were originally sent to Bradford, but because I do not think any good can possibly accrue to Government or to themselves by keeping them longer engaged on office work, or in the drudgery of the details of levelling and measuring up on works, all of which are duties with which they are perfectly familiar.

I can assure you that their visit to Bradford has been a source of great pleasure to me, and I am sure of still greater advantage to the gentlemen themselves.

If I might be permitted to offer an opinion, I would suggest that in future Government would obtain the object it has in view by throwing them, under proper advice, on their own resources, and allowing them to travel about to works scattered over the country rather than by placing them for any lengthened period in one place.

By this course they would attain a more enlarged experience, and avoid the risk of falling into one narrow professional groove, which is always to be avoided.

I find that they are naturally anxious to return to India at as early a date as possible, and that they have a great desire to return home after a year in this country *via* America, Japan, and China, and that they are themselves prepared to defray all the expenses of the homeward journey by that route.

To my mind the expression of such a desire is one of the best proofs I can give of the advantages of the experiment Government is now trying in their particular case; for there can be no doubt that the enlarged experience and cultivation afforded by foreign travel will do much, both directly and indirectly, to educate the gentlemen in question, and through them their friends in the Department in India.

In conclusion, I may remark that they are gentlemen who, I feel sure, can be trusted and that Government, I am sure, will benefit by trusting them as far as possible in completing their own education, a subject which, I know, they have fully at heart.

No. 739-84P.W., dated India Office, 14th May 1884.

From—J. K. Cross, Esq., India Office, London,

To—The President, Coopers Hill College.

I AM directed to acknowledge the receipt of your letter No. 120, dated 23rd April, reporting on the progress made in their studies by the two Native Assistant Engineers, * * * now under practical instruction in this country.

Lord Kimberley regrets to learn from your letter that, although the report of their study of waterworks during their first six months' residence in this country was a favourable one, the subsequent reports of their progress in studying architecture and machine and engine construction are unsatisfactory.

As it appears that they are unwilling to complete the two years' course of study for which they came to England, and are extremely desirous of now returning to India, and as in your opinion it would be best to let them do so, I am to request that you will inform them that permission to return to their duties in India is accorded them; * * * being granted the equivalent of his passage out, with sanction to his proceeding *via* America and Japan, receiving pay until the 15th September, the date at which he might have reached India, had he gone direct, and thenceforward being on leave without pay until his arrival in India, and * * * being allowed to proceed direct to India on or about the 1st August. The interval of time during which they may remain in this country can be spent in the manner suggested in your letter under reply.

The necessary communication will be made to the Government of India regarding the approaching return of these officers to their duty.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.

GENERAL.

To

No. 812G.

Dated Simla, July 8, 1884.

Received

1934-m-8-8-84

Forwards copy of despatch and enclosures from the Secretary of State, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and requests that great care may be taken in the selection of officers to be sent to England for practical training.

No. 27, dated India Office, London, 15th May 1884.

From—The Secretary of State for India,
To—The Government of India.

PARAGRAPH 1.—In continuation of my Public Works letter, No. 36, dated 21st June 1883,
* Letter from Sir A. Taylor, dated 23rd April 1884, I now transmit, for the information of your Excellency's Government, copy of correspondence*
and enclosures. Letter to ditto, dated 14th May 1884. which has recently passed between Sir A. Taylor
and this office, in respect to the results of the practical instruction of the two Native Assistant Engineers, * * * who came to England in 1883.

2. Your Excellency will observe from Sir A. Taylor's letter and its accompaniments that although the reports of their study of water-works during their first six months of residence in this country were favourable, the subsequent reports of their studies of architecture and construction of locomotives are unsatisfactory.

3. As it appears that they are very desirous to return to India at once without completing the two years' course for which they came to England, I considered that under the circumstances, and for the reasons given by Sir A. Taylor, it would not be desirable to insist upon their remaining. I have accordingly decided to allow them to return in the manner and by the routes desired by themselves. * * * will travel by way of America and Japan, rejoining his duties in India in the middle of October, and receiving pay until the 15th September, the date at which he might have reached India had he gone direct, and thenceforward being on leave without pay. * * * will go direct, and will arrive in India about the end of August.

4. This first experiment of permitting Native Engineers to visit this country with the view of gaining knowledge and experience in matters connected with their profession cannot be pronounced to have been successful, and it suggests the necessity of reconsidering the conditions under which they should be selected in future.

No. 120, dated Coopers Hill, 23rd April 1884.

From—GENERAL SIR ALEXANDER TAYLOR, K.C.B.,
To—The Under-Secretary of State for India.

PUBLIC Works letter No. 1979, dated 9th November last, conveyed Lord Kimberley's approval to the two Native Assistant Engineers, * * * devoting six months to the study of architecture under the personal instruction of Mr. Spiers.

They have been engaged in accordance with these instructions since November last. For five days in the week they have studied architecture, and have spent the other two days at the workshops of the Great Eastern Railway Company at Stratford, near London, under the general supervision of Mr. O'Callaghan, a distinguished and experienced Superintendent Engineer of the Indian Public Works Department, who is assisting me in superintending those Assistant Engineers lately appointed from the College, who are undergoing a short course of practical engineering in this country. Mr. O'Callaghan has also, on a few occasions, inspected the work they had done for Mr. Spiers.

Recently I have thought it well to obtain from Mr. Spiers and also from Mr. O'Callaghan specific reports on the progress so far made. These reports I have now the honour to submit in original (return requested).

They are not what I had hoped for. Mr. Spiers is disappointed. The results he had anticipated have not been accomplished. But it is important to notice that he does not attribute the failure to secure a full measure of success so much to the Lallas being wanting in industry, for he says, "they have taken an interest in their work, and have been industrious, though slow," as to their being much less skilful draughtsmen than he had been led to expect.

And I would remark that this is a source of disappointment to which we shall always be liable in endeavouring to teach architecture to Engineers to whom skill in drawing is by no means the vitally essential qualification that it is to architects.

Neither is Mr. O'Callaghan satisfied. The object with which both Assistant Engineers were sent to the Stratford workshops was explained in paragraphs 5 and 6 of my letter No. 101, dated the 19th October 1883, to be to enable them to acquire a good knowledge of engine and machine fitting, a kind of knowledge likely to be useful to them in their future career, and which they themselves expressed a warm desire to acquire. But this object they appear to have lost sight of, and, while attending the works, I believe, with regularity, to have employed their time there in a way which was not in accordance with the instructions they received.

The Secretary of State will remember that * * * soon after their arrival in the country, reported themselves in May 1883 to Mr. Binnie, and studied the Bradford waterworks of which Mr. Binnie is Engineer, under his guidance; that they visited many of the chief engineering works in the north of England with his advice and assistance, finally leaving Bradford in September 1883, and bringing with them from Mr. Binnie a very favourable, indeed complimentary, report. That they then in November took up machine and engine fitting at Stratford; and architecture under Mr. Spiers, with whom they are still working. And as they have not secured favourable reports on their winter's work, the Secretary of State will probably desire to have before him the full text of Mr. Binnie's favourable report on their work with him. A copy of this report I accordingly submit herewith.

The engagement made with Mr. Spiers will come to an end in less than a month, and it has to be considered what it will be best then to do with both Assistant Engineers.

I have asked them to state their wishes on this head, and find that they both most heartily desire to return to India. It is not perhaps necessary that I should enter into a detail of the reasons influencing them. It is easy to see that in the case of Hindus keeping within their caste rules, and with a staff of Indian servants attending on them, a prolonged residence in this country, with ways so novel to them all, must be attended with many very irksome difficulties.

* * * asks permission to leave England about the 1st June next, rejoining his duties in India in the middle of October. He wishes to be allowed to travel *via* America and Japan, and is willing to bear all expenses that may be in excess of the sum it would cost Government to send him back by the route by which he came. He begs, however, the favour of being advanced the passage money that Government would have to pay if he returned direct, and his pay for the four months which the journey would occupy.

* * * requests to be allowed to return direct to India, leaving England in the first week in August, and he proposes to employ the time after leaving Mr. Spiers in visiting important Engineering works in this country, and buildings of architectural interest on the Continent.

There remain the three Native servants, whose passages to England Government paid. No doubt their passages back will similarly be paid.

The Secretary of State will perhaps desire that I should state the course I would recommend. My opinion is that, seeing how earnestly both the Assistant Engineers desire to return to India this summer, it is undesirable to detain them longer.

I think that they might turn a month or six weeks to good account, after leaving Mr. Spiers, in inking in and completing the studies made in pencil while with him, and in visiting carefully such buildings in London as he may recommend. After that it would be best, in my judgment, to let them return to India without delay.

I do not believe in much good being likely to result from butterfly visits, either to large engineering works in England or to buildings of architectural interest on the Continent. The impressions thus hastily made cannot be expected to be other than superficial; useful knowledge is not to be acquired in this easy way.

I would draw attention to * * * application to be allowed to go back to his duties *via* America and Japan.

Dated Carlton Chambers, 12, Regent Street, March 1884.

From—R. PHENE-SPIERS, Esq., F.S.A.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., President of the Royal Indian College, Coopers Hill.

IN accordance with your request conveyed to me through Mr. O'Callaghan; I beg to report that the course which I laid down for the instruction of * * * in architectural design has been carried out more or less as suggested. The progress made, however, has been comparatively slow, owing to their extremely weak draughtsmanship; this was, in fact, one of the first defects I found out, and in answer to my inquiries whether they had ever learnt drawing at all, they explained to me it was so many years ago that they had forgotten all about it—a singular confession for Engineers to make. I trusted, after a time, that their former acquirements in this respect might return, and to a certain extent this has happened; but, even now, their drawings seem to me to be inferior to those of the students at Coopers Hill. Their studies in design have been, therefore, materially delayed in consequence of their being unable to express their ideas in drawing. I was at one time inclined to insist that every design should be completed before I gave another subject; they pointed out to me that the acquirements of the principles of design were more important to them now, and that they could finish their drawings at their leisure afterwards in India. I gave way, therefore, until I found out through Mr. O'Callaghan that they intended to hand over these drawings to Native draughtsmen to finish in ink (an idea which would be repugnant to an English student who had any interest in his own work), and then I insisted on their completing some of their designs. I understand they propose to take these down to you next week.

An important consideration now presents itself: less than two months remains of the original term agreed upon for their instruction. It is quite certain I shall never make good draughtsmen out of them, though, in this respect, * * * is much better than * * *; and when I say draughtsmen, I mean careful, accurate draughtsmen, and not artistic. I have no complaints to make of them; they are industrious, though slow; they are interested in their work, and show great intelligence in following my arguments, though in the application of the principles laid down they frequently fail, sometimes from sheer carelessness, sometimes from want of power of drawing. This carelessness of which I speak and disinclination to take trouble to arrive at what they seem to think are small matters are quite peculiar to them. I do not remember ever to have noticed the same defect (at all events not to the same extent as in * * *) in any of the two or three hundred students who have passed through my school at the Royal Academy.

A great portion of my time has been occupied in teaching them how to project features on plan, section, and elevation, which they as Engineers ought to have known better how to teach me. They seemed to have forgotten all about the elementary problems of intersections of cones, cylinders, and spheres, which, I presume, formed a part of their earlier courses of study. They say that they could set the construction of such features out on the works if such were ever required, and that may possibly be the case. I have known foremen of works who could set out the most complicated problems of vaulting, but whose draughtsmanship on a small scale was deplorable. Foremen, however, are not called upon to design, and this is the chief difficulty which presents itself with * * *; they seem to think that because, having a retentive memory, they are able to recollect and could probably pass a good examination in writing about what I have told them, nothing more is required excepting to set some Native draughtsman to work out designs from their description—an idea which, of course, is quite illusory. They might be able to describe a palace in writing and unable to design and draw even a pigsty.

I think it may be advisable that, in June and July, they should travel either in England or Italy to study existing buildings and make sketches and notes, and I am now laying down routes for them to take in London, where they will find interesting and useful examples of architecture.

Dated 18, Shorncliffe Road, Folkestone, 5th April 1884.

From—J. L. O'CALLAGHAN, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.B., R.E.

IN compliance with your request I send the following report on the two Native Engineers now studying in England.

When I took charge of the practical course they had just come up to London from Bradford, and were supposed to be attending the works of Messrs. Westwood, Baillie and Company. Arrangements were being made for a course of instruction in architecture under Mr. P. Spiers, and they having expressed a wish to spend a portion of their time in locomotive shops, it was settled that they were to spend two days a week at the Great Eastern shops at Stratford.

Mr. Spiers has, I believe, sent you a report on them, and I need only add that I was disappointed in their work under him. They seem to me to have misunderstood the object of their visit to England, and so soon as the novelty wore off they failed to work with the zeal they at first displayed.

In the locomotive works they have seen a good deal, but have not made many notes or sketches, giving as an excuse that the Locomotive Superintendent objected to their making sketches. It, however, turned out that what he objected to was only what from the first he said he would not allow, *viz.*, the making copies of drawings in his office. Instead of sketching simple useful appliances they wished to copy drawings of complicated hydraulic machinery which could not be of any future use to them. This naturally was objected to.

Their sole desire now seems to be to return to India, and I fear it would not lead to any useful result if they are compelled to remain in England for another year.

It will be impossible to ascertain the amount of information they have acquired until they are again at work in India, but I fear a good deal of what they have learned is only superficial.

Dated Waterworks Engineer's Office, Town Hall, Bradford, 24th July 1883.

From—ALEXANDER R. BINNIE, Esq.,

To—GENERAL SIR ALEXANDER TAYLOR, K.C.S.I.

Now that * * * have been with me for some time, I feel sure that you would like to hear how they are getting on, as well as my opinion on the probable usefulness of such instruction as they are receiving.

In the first place, I would remark that, coming as they do to this country after a good theoretical education, ten years' practical experience in the Public Works Department in India,

and above all with a thorough determination to learn all they can, that they have made great progress in acquiring a good knowledge of waterworks engineering, and I may say that I am very pleased indeed to be able to report most favourably of them in every way.

Now that they have received a good general insight into our waterworks at Bradford, I have made arrangements with some of my professional friends to enable them to visit similar works at Leeds, Edinburgh, Glasgow, Manchester, Liverpool, and Halifax, after doing which I think that they will have acquired as much insight as is possible into our English system of water-supply.

During their stay at Bradford I have taken many opportunities of showing them all that relates to the iron and textile manufactures of the district, as well as taking them over our drainage and sewerage and gasworks.

The tour of the above works, I think, may occupy about another month or six weeks, when, looking to the further insight which it is desired they should obtain into architectural practice, I think they might pass with advantage into other hands.

I say this, not with any desire to relieve myself of any further responsibility, or to curtail the period of six months for which they were originally sent to Bradford, but because I do not think any good can possibly accrue to Government or to themselves by keeping them longer engaged on office work, or in the drudgery of the details of levelling and measuring up on works, all of which are duties with which they are perfectly familiar.

I can assure you that their visit to Bradford has been a source of great pleasure to me, and I am sure of still greater advantage to the gentlemen themselves.

If I might be permitted to offer an opinion, I would suggest that in future Government would obtain the object it has in view by throwing them, under proper advice, on their own resources, and allowing them to travel about to works scattered over the country rather than by placing them for any lengthened period in one place.

By this course they would attain a more enlarged experience, and avoid the risk of falling into one narrow professional groove, which is always to be avoided.

I find that they are naturally anxious to return to India at as early a date as possible, and that they have a great desire to return home after a year in this country *via* America, Japan, and China, and that they are themselves prepared to defray all the expenses of the homeward journey by that route.

To my mind the expression of such a desire is one of the best proofs I can give of the advantages of the experiment Government is now trying in their particular case; for there can be no doubt that the enlarged experience and cultivation afforded by foreign travel will do much, both directly and indirectly, to educate the gentlemen in question, and through them their friends in the Department in India.

In conclusion, I may remark that they are gentlemen who, I feel sure, can be trusted and that Government, I am sure, will benefit by trusting them as far as possible in completing their own education, a subject which, I know, they have fully at heart.

No. 739-84P.W., dated India Office, 14th May 1884.

From—J. K. CROSS, Esq., India Office, London,

To—The President, Coopers Hill College.

I AM directed to acknowledge the receipt of your letter No. 120, dated 23rd April, reporting on the progress made in their studies by the two Native Assistant Engineers. * * *

Lord Kimberley regrets to learn from your letter that, although the report of their study of waterworks during their first six months' residence in this country was a favourable one, the subsequent reports of their progress in studying architecture and machine and engine construction are unsatisfactory.

As it appears that they are unwilling to complete the two years' course of study for which they came to England, and are extremely desirous of now returning to India, and as in your opinion it would be best to let them do so, I am to request that you will inform them that permission to return to their duties in India is accorded them; * * * being granted the equivalent of his passage out, with sanction to his proceeding *via* America and Japan, receiving pay until the 15th September, the date at which he might have reached India, had he gone direct, and thenceforward being on leave without pay until his arrival in India, and * * * being allowed to proceed direct to India on or about the 1st August. The interval of time during which they may remain in this country can be spent in the manner suggested in your letter under reply.

The necessary communication will be made to the Government of India regarding the approaching return of these officers to their duty.

No. 812G.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL.

To

THE GOVERNMENTS OF MADRAS, BOMBAY, BENGAL, THE NORTH-WESTERN PROVINCES AND OUDH, AND THE PUNJAB, PUBLIC WORKS DEPARTMENT.

THE CHIEF COMMISSIONERS OF THE CENTRAL PROVINCES, BRITISH BURMA, ASSAM, AND COORG.

THE RESIDENT AT HYDERABAD.

THE AGENTS TO THE GOVERNOR GENERAL FOR CENTRAL INDIA, RAJPUTANA AND BILUCHISTAN.

THE DIRECTOR GENERAL OF RAILWAYS.

Simla, July 8, 1884.

SIR,

ADVERTING to previous correspondence on the subject of the practical training in England of Native Engineers, I am directed to forward copy of a despatch from the Secretary of State, No. 27 P. W. of 15th May 1884, and enclosures, showing the result of the training during the first year of the two Native Engineers who were sent for the purpose to England in 1883, and, with reference thereto, to request that great care may always be exercised in the selection of officers to be sent to England for practical training, the officers selected being made most clearly to understand what description of training is before them, and what the inconveniences to them of life in England may be.

I have the honor to be,

SIR,

Your most obedient Servant,

A. B. SAMPSON,

Under Secretary.

Documents accompanying.

Copy of despatch and enclosures referred to.