M.R.O. 14—13,000—27-9-24

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 1076 Press ~~Mis.~~

72-73

Dated 4—5—1867.

Not to be folded or roughly handled

No. 72. Read the following Circular from the Government of India, Public Works Department, (Revenue—Forests,) dated Fort William, 11th April 1867, No. 6:—

Trained Assistants for the Forest Department of India.

Read again the following papers:—

1. Letter from Dr. Brandis, Inspector General of Forests (on leave), dated 13th October 1866.
2. Despatch from Secretary of State, No. 64, dated 9th November 1866.
3. Do. do. ,, 73, ,, 7th December ,,

Read also:—

1. Letter from Dr. Brandis, Inspector General of Forests (on leave), dated 24th September 1866.
2. Do. do. dated 6th October 1866.
3. Despatch from Secretary of State, No. 63, dated 31st October 1866.
4. Do. do. ,, 81, ,, 15th Dec. ,,

OBSERVATIONS.—The correspondence read above embraces four subjects—

1. I.—Certain special appointments of trained Forest Officers from Europe, recommended by the Government of India on Dr. Brandis' suggestion, and sanctioned by the Secretary of State.

The Forest Officers have already arrived; Mr. W. Schlich and Mr. B. Ribbentrop from Germany have been appointed "Special Assistant Conservators," and posted, the former to British Burmah, the latter to the Punjab, and Mr. W. L. Grahame, a practical forester from Scotland, has been attached to the Forest Department of the Central Provinces.

2. II.—Facilities to be afforded to Officers of the Forest Department of India, on leave in England, to study the forestry of Europe, both practically and theoretically, the actual expenses incurred in fees and in travelling being re-imbursed to them.

The Secretary of State has approved of this, and two Officers belonging to the Forest Department in British Burmah (Captain Seaton and Lieutenant Stenhouse) have availed themselves of the facilities thus afforded.

3. III.—Arrangements proposed by Dr. Brandis for training five young men in Europe, according to a prescribed course of study, and for sending them out for employment in the Forest Department of India as an experiment, preliminary to the adoption of a general system proposed for supplying the department with trained Forest Officers.

The Secretary of State has approved of this arrangement, and it is understood that candidates have presented themselves, and that Dr. Brandis has made the necessary arrangements for their training in the Forest schools and forests on the Continent of Europe.

4. IV.—A general scheme proposed by Dr. Brandis for permanently improving the administration of the Forest Department of India by sending out trained men from Europe.

Proceedings of the Madras Government, Revenue Department, 4th May 1867.

The Secretary of State has deferred his opinion on this proposal, and before arriving at any decision, has asked the Government of India for an expression of its opinion.

5. The Governor General in Council considers that it will be very advisable to have the opinions of the Local Governments and Administrations on the proposed system of supplying the wants of the Forest Department.

6. The Government of India have expressed to the Secretary of State their sense of the zeal displayed by Dr. Brandis in the use he has made of his leave on medical certificate, and the value of the service he has rendered to the department of the public service over which he presides.

ORDER.—Ordered, that the foregoing Resolution, with a selection of the papers read, be forwarded to the Local Governments and Administrations noted in the margin, with a request that the Government of India may be furnished with the opinions of the chief authorities on Dr. Brandis' proposal.

Bengal.	Mysore.
N. W. Provinces.	Coorg.
Punjab.	Hyderabad.
Oudh.	Rajpootana.
Central Provinces.	Central India.
British Burmah.	

Ordered, also, that the Resolution and papers be forwarded to the Governments of Madras and Bombay, with a request that the Government of India may also be favored with the views of those Governments to aid it in its decision on this important question.

(Signed) C. H. DICKENS, Colonel, R. A.,
Secretary to the Government of India.

No. 73. ORDER THEREON, 4th May 1867, No. 10,16.

Forests, No. 2.

Ordered that these papers be communicated to the Conservator of Forests, in continuation of the Proceedings, dated 8th April 1867, No. 816; and that he be requested to submit his views on the proposed system of supplying the wants of the Forest Department by training men in Europe. The reply of Dr. Cleghorn to the Order, dated 27th April 1867, No. 950, may be included in the report now called for.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Conservator of Forests.

Fd. F. R. Bantleman.

General training of Forest Officers for India and proposal to send out five young men trained for the Department.

Dated 13th October, 1866.

From—DR. D. BRANDIS, *Inspector General of Forests to Govt. of India (on leave in Europe),*
To—Secretary to Government of India, P. W. Dept.

I have now the honour to report progress in the matter of Forest Officers whom I was authorized to select in the letter to my address from the Under Secretary of State for India, of the 16th August, *viz.*, two gentlemen trained in Germany or France, at salaries of Rs. 500 each, and a Forester acquainted with the management of Forests in Scotland, at Rs. 200 per mensem.

2. For the last-named appointment, I have received a number of applications. As I could not remain long enough in Scotland to make the final selection myself, I have asked Professor Balfour, the Director of the Royal Botanic Gardens, Edinburgh, to act for me, which he has kindly consented to do. I hope shortly to be in a position to recommend to the Secretary of State a suitable person for the appointment.

3. I have also a number of candidates for the superior appointments, to be filled from Germany or France, and hope that, before the end of this year, two good men will be on their way to India. One of them, I would suggest, might be sent to Burmah, and the other to the Punjab, in accordance with the wishes of the Lieutenant Governor, and the Chief Commissioner of those Provinces.

4. The Forester from Scotland will then have to be posted to the Central Provinces, this being the third Province from which applications for a Forest Officer from Europe had been received. This arrangement might, perhaps, meet with the approval of His Excellency the Governor General in Council, in consideration of Mr. Temple's proposal for two Foresters in 1864 or 1865, one of whom only was sanctioned at the time. Under these circumstances, I shall take it upon myself to submit a copy of this letter to the Under Secretary of State for India, suggesting that the Forester from Scotland be sent to Nagpoor *vid* Bombay under the same agreement as that made last spring with Mr. Davidson.

5. I trust that my proceedings in this matter will meet with the approval of His Excellency the Governor General in Council, and I would respectfully request that the needful communications be sent to the Lieutenant Governor of Punjab, and to the Chief Commissioners of the Central Provinces and British Burmah.

No. 64, dated 9th November, 1866.

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

With reference to my Despatch No. 54 of the 14th September last, and to the letter from Dr. Brandis to Lieutenant-Colonel Dickens, of the 13th of October (a copy of which was sent to this Office by Dr. Brandis), I transmit to you the copy of a letter* from Dr. Brandis to the Under Secretary of State for India, and of the reply thereto, by which you will perceive that Dr. Brandis has selected two German gentlemen, Mr. Wilhelm Schlich, and Mr. Berthold Ribbentrop, as thoroughly competent for the work of Forest Officers in India, and that I have comfirmed his selection. These Officers will proceed to India by the mail of the 4th of January next, and you will have time to decide upon the best means of employing them efficiently before their arrival in Calcutta.

* Dated 23rd October 1866.

2. I have also to inform your Excellency in Council that, on the recommendation of Dr. Brandis and Professor Balfour of the Royal Botanic Garden at Edinburgh, I have nominated William Luke Grahame as a fit person to go to India as Forester, and that a passage to Bombay will be taken for him by the mail from Southampton of the 12th proximo.

105—26, 3, 67.

Dated 23rd October, 1866.

From—Dr. D. Brandis, *Insptr. Genl. of Forests to the Govt. of India, (on leave in Europe),*
To—*Under Secretary of State for India.*

In continuation of my letter to Colonel Dickens, Secretary of the Government of India, dated the 13th instant, copy of which I submitted to you on the same date, I have now the honour to report, for the information of Her Majesty's Secretary of State for India, that I have selected two gentlemen from among the applicants for the appointments sanctioned in your letter of the 16th August last.

2. The senior of these gentlemen, Mr. Wilhelm Schlich, of the Grand Duchy of Hesse-Darmstadt, has made his studies at Giessen and Carlsruhe; he has passed all examinations required for the higher branches of the service, and has served three years and a half in the Forest Department of his country. He is the author of several valuable papers published in one of the leading German Forest Journals. The second, Mr. Berthold Ribbentrop, from Hanover, made his studies at the Forest Schools of Eisenach and Ashaffenbourg. He has likewise passed his examinations; and, in addition to his practical training of one year and a half, has served two years in different Forest Districts of the former Kingdom of Hanover. Both are very well connected, and thoroughly competent for the work for which they have been selected.

3. They wish to have some time to make their preparations, and to resume the study of English, which they commenced while at school. I have therefore arranged that they should reach London by the 26th December next, and would suggest that two first class Overland passages for them be taken in the steamer which leaves Southampton about the 4th January. With reference to this arrangement, I enclose a letter from them to my address of this date.

4. I beg to add that, on their arrival in Calcutta, the Government of India will have to decide which of them is to go to Burmah, and who to the Punjab. Should there be any doubt, Mr. Schlich, as the senior, will perhaps be allowed to chose; but I may state my opinion that, as far as I am acquainted with the present state of matters in these two Provinces, the interests of the public service, as well as his own, will best be furthered by his being sent to British Burmah at present. Mr. Ribbentrop would, in that case, go to the Punjab.

5. I would respectfully beg that a copy of this letter be sent to the Government of India.

Dated 23rd October, 1866.

From—Messrs. W. Schlich and B. Ribbentrop,—
To—*Inspector General of Forests to the Government of India, (on leave in Europe).*

You have been good enough to inform us that our applications for appointments in the Forest Department under the British Government in India have been accepted: and, in accordance with your request, we beg now to state that we have examined the conditions of the Contract and of the Leave and Pension Rules of the Uncovenanted Service, copies of which documents you have communicated to us. We are willing to enter the service of the British Government in India under these conditions, and intend to proceed to London, and to present ourselves at the India Office, about the 26th December next, for the purpose of signing the Contract with Her Majesty's Secretary of State. The time to that date we desire to employ for the study of English, and for the other necessary preparations.

Any communications, will find us, if directed to W. Schlich, Esq., *Poste Restante*, Gottingen, Germany.

Dated 2nd November, 1866.

From—H. Merivale, Esq., *Under Secretary of State for India,*
To—*Inspector General of Forests to the Government of India, (on leave in Europe).*

I am directed by Lord Cranborne to acknowledge the receipt of your letter of the 23rd ultimo, in which you state that you have selected Mr. Wilhelm Schlich and Mr. Berthold Ribbentrop as thoroughly competent to be employed as Forest Officers under the Government of India, under the authority conveyed to you in Sir James Fergusson's letter of the 16th of August last.

In reply, I have to inform you that the Secretary of State for India in Council confirms your selection of those gentlemen, and approves the arrangement for their leaving England by the Mail of the 4th January next. Measures will be taken to secure passages for them on that date, and the Government of India will be informed of the arrangements which have been made for their departure from England.

Your opinion as to the future employment of Mr. Schlich and Mr. Ribbentrop will be forwarded to the Government of India.

I am also directed to inform you that Lord Cranborne has nominated William Grahame, on the recommendation of Professor Balfour, for the third appointment sanctioned in the letter of the 16th of August above referred to.

No. 73, dated 7th December, 1866.

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

With reference to para. 2 of my Despatch of the 9th ultimo, No. 64, I transmit to your Excellency in Council a triplicate copy of the Articles of Agreement (*deposited*) entered into by William Luke Grahame, whose passage has been taken to Bombay by the Mail of the 12th instant.

2. Your Excellency in Council will be good enough to issue the necessary orders in regard to the employment of this person, should you not have already done so.

No. 155, dated 14th January, 1867.

RESOLUTION,—By the Goverument of Bombay, in the Revenue Dept.

Letter from Mr. W. L. Grahame, dated 11th January 1867, reporting his arrival by the P. and O. Company's Steamer *Rangoon* on the 10th instant; forwarding the Articles of Agreement he has entered into with Her Majesty's Principal Secretary of State for employment in the Forest Department in India, and requesting that, under Clause 2, orders may be issued for the payment to him of the sum of £40, or Rs. 400, by way of outfit, and of his salary from the 3rd December 1866, the day he was engaged to the end of that month.

Telegram from the Assistant Secretary to he Government of India, in the Public Works Department, Calcutta, dated 11th January 1867, stating that Mr. William, Grahame, a Forester for the Central Provinces, left Southamption on the 12th December 1866, and that he has been engaged upon the same terms as Mr. Davidson.

Resolution.—Mr. Grahame should be instructed to proceed at once to Nagpoor, reporting himself, on his arrival there, to the Chief Commissioner, Central Provinces. He should at the same time be informed that, besides the advance and salary asked for in his letter of the 11th instant, the Accountant General will pay him his travelling expenses from Bombay to Nagpoor.

2. The necessary communication to be made to the Accountant General, the Chief Commissioner, Central Provinces, and the Government of India.

No. 33 F, dated 28th January, 1867.

RESOLUTION,—By the Government of India, P. W. Dept.

Read:—

Para. 2 of Despatch from Secretary of State, No. 64, dated 9th November 1866, stating that Mr. W. L. Grahame had been nominated to go to India as a Forester.

Despatch from the Secretary of State, No. 73, dated 7th December 1866, forwarding Mr. Grahame's Articles of Agreement, and stating that his passage to Bombay had been taken by the steamer of the 12th January 1867.

Docket from the Government of Bombay, No. 156, dated 14th January 1867, stating that Mr. Grahame had arrived, and had been instructed to proceed at once to Nagpoor.

Observations.—In a letter No. $\frac{3721}{341}$, dated 27th November 1866, the Chief Commissioner of the Central Provinces said that he would provide for one of the selected Officers for the Forest Department, who were to be sent out from England. Mr. Grahame, who was selected jointly by Dr. Brandis and Professor Balfour of Edinburgh, having now arrived, it is directed that he may be employed in one of the Divisions where the formation of Teak plantations is most desirable. The addition of two skilled Assistants to the Forest Department (Mr. Grahame and Mr. Davidson sent out last year) is expected to exercise a beneficial influence upon the progress of Forest conservancy in the Central Provinces.

Order.—Ordered, that the above Observations, with the papers now read, be communicated to the Chief Commissioner of the Central Provinces.

Dated 24th September, 1866.

From—Dr. D. Brandis, *Insptr. General of Forests to Govt. of India, (on leave in Europe),*
To—*Secretary to Government of India, P. W. Dept.*

The Government of India having in their Despatch of the 25th June last, to Her Majesty's Principal Secretary of State for India, expressed their entire concurrence in the importance of introducing trained Assistants for the management of the Government Forests in India, I feel justified in now submitting the following proposals for the favourable consideration of His Excellency the Governor General.

2. My first proposal refers to Forest Officers on leave in Europe; the second to the training of young men in this country for the service of the Forest Department in India.

3. With regard to the first subject, I beg to suggest that Forest Officers who proceed to Europe on leave or furlough, be recommended to go through a regular course of training in Forestry, and to obtain certificates of their having done so. The extent of this training would necessarily vary according to the length of their leave, but the following arrangement might be recommended:—

1st.—One month with an approved Wood Manager in Scotland during the time when most planting work is going on. The best time of the year would be February and March.

2nd.—Five or six months, between April and November, with an approved Forest Officer on the Continent, either in France or in Germany.

The certificates to be granted by the Instructors might, with a short account by the Officers themselves of the time thus spent under training, be submitted by them to the India Office, and thence be transmitted to the Government of India, to be registered by the Government under which the Officers are serving. No promise could, of course, be given to the holders of such certificates, although it seems not unreasonable to suppose that, in case of promotion, the special training here recommended might in some cases be considered an advantage.

Some fees will have to be paid to the Instructors. In Scotland, I have ascertained the usual amount to be £5 per mensem. In Germany or France it will probably be somewhat less. If Government would undertake to pay these fees, this would somewhat lessen the expense to Forest Officers, and it might be hoped that some who might otherwise be deterred by the expense, would follow the recommendations here suggested.

I may mention that two Forest Officers from Burmah, Captain W. J. Seaton, M. S. C., and Lieutenant W. Stenhouse, M. N. I., now on sick leave in Europe, have at my suggestion decided to undergo a course of training similar to that here proposed without knowing whether the certificates to be obtained will be of any value to them in India. I would respectfully suggest that, should my present proposal be accepted, any fees paid by these Officers should be refunded to them.

4. I wish here to guard against a possible misconception Forest Officers on leave in Europe should not, as a rule, be recommended to spend their time in travelling about the forests of different countries, imagining to learn Forestry by such journeys and an occasional intercourse with Forest Officers. Such journeys are useful for those who are already familiar with the practice and science of Forestry in Europe. For all others, a prolonged sojourn with experienced Forest Officers in one or two Forest Districts will be required to obtain an insight into the general system of Forest management that may be turned to useful account in their future career in India.

5. It may also be necessary to explain why I have proposed a longer time to be devoted to the forests on the Continent than to those in Scotland. On the Continent of Europe, especially in Germany and France, the forests are more extensive, and their administration is entrusted to large Departments with numerous Officers of different grades, who have all received a thorough practical and scientific education. In those countries Forestry is an important profession, which is followed by young men of the best families, who have a good career to look forward to in the Administration, not only of the State Forests, but also of those belonging to Communes and other Public bodies, and of private proprietors.

The State Forests of France alone cover an area of 2,706,000 acres, with a gross revenue of £1,740,600, upon which the charges amount to £494,320; those of Bavaria cover 1,962,000 acres; and those of Prussia, before the late war, 5,075,000 acres. Compared with these, the wood-lands and plantations in England and Scotland are on a much smaller scale, and the education of Foresters is not of that high character found in Germany and France.

Again, there are important differences in the general system of management; and upon the whole it may be said that the system which should be followed in many Provinces of India, approaches more to the method which has gradually developed itself in Germany and France, and which in those countries has been brought to a high state of perfection. Without entering into details, which could not be exhausted in this paper, I may state that, on the Continent of Europe, natural re-production of the forest is the rule, not of coppice woods only, but also of high timber forest. The main point looked to in the management of a high timber forest in those countries is so to arrange the cutting and felling as to secure the ground being covered with a young crop of self-sown trees before the old crop is entirely removed. This requires a careful and methodical management. In Scotland and England, with the exception of coppice woods, and a limited extent of natural forest of Scotch Fir in the Highlands, the system generally followed is to cut down the mature crop and to plant.

In a large portion of the Indian forests, natural re-production will have to be relied upon for the maintenance of the forest, planting operations being carried on, as in France and Germany, where the old forest has disappeared, or has been injured so as to give no hope of a satisfactory natural re-production. Under similar circumstances, and on barren wastes, planting operations are carried on in Germany and France with great skill, and on a very large scale, and with great economy. Upon the whole, an intimate acquaintance with the system and practice of Forestry in Germany and France is, in my opinion, a matter of the first importance for the successful management of a large portion of the Forests in India.

I may mention that, to enable me to form correct views of the value of training in this branch in England and Scotland, as compared with Germany and France, I have, after spending the first year of my leave in visiting a large extent of forests in the countries last-named, devoted the last month-and-a-half to visits at several of the Crown Forests in England, and a large number of estates with woods and plantations in England and Scotland.

6. My second proposal refers to the training of young men of this country for the service of the Forest Department in India. The Forest appointments for the minor Administrations are in the gift of the Governor General; of the Governors of Bombay and Madras for these Presidencies; and of the Lieutenant Governors of Bengal, the Punjab, and the North Western, for these last-named Provinces; the remarks and proposals of this letter, however, do not, I beg to state, refer to either Madras or Bombay.

Under these circumstances, any thing like a competitive examination in England for Forest appointments is out of the question. But something might be done towards securing the services of young men with special training by following the plan which I now beg most respectfully to suggest.

7. It might be understood that, after a certain date, say two years hence, the Governor General would give preference to such candidates who would furnish satisfactory proof of their having passed through a regular course of training in Forestry and Land surveying; and of their having devoted some time to the study of Botany and other Natural Sciences. The three Lieutenant Governors might, perhaps, be recommended to adopt a similar course in case of new appointments; and should the plan succeed, the Governors of Madras and Bombay might possibly hereafter avail themselves of the same source to obtain trained men for the Forest Department. Thus a fair opening might be held out to young men of good family connexions, who had passed through the course of training here recommended, in the service of the forests in India. Illusions, however, regarding the chances of promotion should be guarded against; for, under existing circumstances, with six distinct Forest Departments in the different Provinces of India, the chances of promotion for a young man who enters one of them are not very satisfactory.

Nor should I have ventured to make the present proposals, had it not been for numerous enquiries made to me regarding Forest appointments in India, which have led me to believe that, even under present circumstances, suitable candidates will come forward should the plan here suggested be adopted.

8. The following is the course of study and practical training which I would propose. As here sketched, it would occupy the best part of three years:—

1st.—A course of lectures, either at the Edinburgh University, or at the London University College, on Botany, Chemistry, Geology, Natural Philosophy, and Zoology. A summer and winter term would, I believe, suffice for attending these lectures; but a second winter term should be added for repetitions.

2nd.—A practical and theoretical course with a competent Land Surveyor.

3rd.—Two months with an approved Forester or Wood Manager in Scotland.

4th.—One year with an approved Forest Officer, either in Germany or in France.

9. Should such appear desirable, I would offer to make preliminary arrangements with an experienced Forester in Scotland, and with Forest Officers on the Continent, to receive young men for training. I would arrange the rate of fees to be paid, and I would endeavour to obtain the concurrence to this arrangement of the Chief Forest Officers of the State to which the Officers selected as Instructors belong. I would also arrange for changes to be reported

to the India Office. As these arrangements could not conveniently be made by letter from India, I have taken it upon myself to submit a copy of this letter to Her Majesty's Secretary of State for India, soliciting authority to make the preliminary arrangements in question before my departure for India.

10. Should the present proposals be accepted, a paper might be printed and distributed to applicants at the India Office, setting forth the particulars of the course of training and studies, and suggesting to candidates for Forest appointments in India to register their certificates of studies and training at the India Office, together with a Medical Certificate of good health, and a constitution without blemish, as well as proofs of a good general education. These papers might then be transmitted to India. The candidates would have to go out at their own expense, and would have to take the chance of appointments n the Uncovenanted Service of one of the Forest Departments in India.

Dated 6th October, 1866.

From—Dr. D. Brandis, *Inspr. Genl. of Forests to Govt. of India, (on leave in Europe),*
To—*Secretary to Government of India, P. W. Dept.*

Since despatching to you my letter of the 24th ultimo, on the subject of training candidates for the Forest Department in India, I have had opportunities of discussing this matter with several of my friends, especially with Dr. J. D. Hooker, the Director of the Royal Gardens at Kew. The result of these discussions has been the following proposal, the object of which is to test the practical working of the plan sketched in that letter.

2. I would most earnestly solicit His Excellency the Governor General of India in Council to request Her Majesty's Secretary of State for India in Council to send out, for service in the Forests under the Government of India, as an experiment, and in one year only, a small number of young men of this country, say five, trained in the manner which will be indicated in this letter.

At the outset, I wish to state that these men would not be intended for service in the Bombay or Madras Presidencies, but should the Government of India not have a sufficient number of vacancies, including those which may be available under the Lieutenant Governors of Bengal, the Punjab, and the North-West Provinces; then, perhaps, the Governors of Madras and Bombay might be induced to employ one or two out of the five sent out.

3. Before detailing the plan of training suggested, I beg permission to enter into some detail regarding the course of studies and practical training followed by candidates for Forest appointments in the public service of those countries on the Continent of Europe where the management of the Forests has, for generations, been conducted with care and success. The great importance of the subject will be my excuse for being long and, perhaps, tedious. I will begin by detailing the course followed in Bavaria, and afterwards indicate any differences of importance which are found in other countries.

4. Candidates for appointments in the higher branch of the Bavarian State Forest Service must have absolved one of the higher schools, called *Gymnasium*. The instruction given in these schools in Classics and Mathematics is of a superior kind, and, in addition to these, are taught history, French, certain portions of natural history, and the elements of natural philosophy, and chemistry. When quitting the *Gymnasium*, young men are commonly from 17 to 19 years of age.

Bavarian system.

Before being admitted into the Forest School, which is at Aschaffenburg-on-the-Main, they must pass eight months, from September to May, as apprentices in a Forest District, under an approved Forest Officer, where they are employed in assisting the Officer and his subordinates in their work. The object of this short preliminary practical training is to give these young men, fresh from school, some idea of the out-door work in the Forests, and thus to enable them better to understand the lectures on Forestry. It has also been found, that the hardships of the first Winter make young men of a weak constitution discover their mistake, and induce them to take to another profession before it is too late.

5. The course at the Bavarian Forest School begins in Spring, and extends over two years and a half, comprising two winter and three Summer terms. Besides the Director, there are four Professors and one Lecturer for the different branches of study, which are as follows :—

1st.—*Forestry.* On the general management and improvement of Forests; on planting and all operations connected therewith; on the division of Forests into blocks; valuation surveys; the determination of the length of rotation, and of the possible yield of a Forest within the limits required for its maintenance; on the arrangement and carrying out of methodical working plans; and on the preparation, transport, and sale of timber and other Forest produce.

2nd.—*Natural Sciences,* with special reference to the requirements of Forest Officers. The elements of natural philosophy, with special regard to climate and meteorological phenomena. Mineral and organic chemistry, particularly the facts bearing upon the nutrition of plants and animals. The elements of mineralogy and geology. Selected portions of systematic botany and zoology, comprising a detailed history of the trees and shrubs indigenous in, and introduced into, northern and middle Europe; their anatomical structure, morphological characters, and geographic distribution; a detailed history of the vertebrate animals inhabiting the Forests of Europe; and a special course of lectures, with demonstrations, on the insects which do damage to trees and timber. Another special course of lectures is devoted to the physiology of plants.

3rd.—Certain branches of pure and applied mathematics, the elements of mechanics, of surveying and engineering.

I may mention that, as a rule, Forest Officers in Bavaria are required to make topographical surveys, and to prepare plans of the Forests, wherever necessary; they also build roads, bridges, and carry out works for regulating water-courses for floating.

4th.—Forest legislation and Forest police.

Excursions and short journeys are made from time to time, under the lead of one or several of the Professors of the Institution, for the purpose of illustrating the lectures on Forestry.

There is also practical instruction in drawing, surveying, and chemical analysis in the laboratory.

6. At the close of each term, there is an examination, and there is a final one at the close of the entire course of study. Those candidates who have passed these examinations, serve an apprenticeship of two years before being admitted to the principal examination for the higher Forest Service. During this time, they are frequently employed acting in subordinate appointments in Government Forests, or in the Forests of Communes. Those who wish to rise to the highest grades in the Forest administration, are bound, in addition to the above, to attend a course on law and political economy during two half-yearly terms at one of the Universities.

7. The principal examination takes place once in two or three years at the chief stations of each of the eight Provinces of Bavaria, and lasts twelve days. Those who pass are qualified for appointments in the higher branch of the State Forest Service.

The time of training and studies, therefore, extends over five or six years; about one-half of this time is devoted to a practical apprenticeship in the Forests.

The Forest School at Aschaffenburg is exclusively devoted to the training of Forest Officers. Besides young men who prepare for the service in Bavaria, there is generally a considerable number of students from other parts of Germany, from Russia, and from Scandinavia.

8. For France, a similar institution exists at Nancy. The present Director, M. Nanquette, is an eminent man, the author of a short but excellent work on the *Aménagement* (working plan) of Forests. The number of students is usually between 30 and 40, almost all preparing for the State Forest Service, which, in France, has also charge of the Forests belonging to Communes, Hospitals, Schools and other public bodies. The students at Nancy live in the buildings belonging to the Institution; they are required to wear uniform, and are under a strict military discipline. The candidates admitted as students are selected from the applicants by a competitive examination bearing on the following subjects :—

French system at Nancy.

1st, Arithmetic; 2nd, Algebra, (as far as quadratic equations and logarithms); 3rd, Geometry, (including the elements of conic sections); 4th, the principles of land surveying; 5th, Trigonometry; 6th, the elements of Natural Philosophy and Chemistry; 7th, Mechanics; 8th, Natural History (the elements of Botany Zoology and Geology); 9th, the German language; 10th, History and Geography; 11th, Drawing; 12th, French composition.

9. The candidates who pass this test are well prepared to profit by the instruction given at Nancy. The course extends over two years, and there is no preliminary practical training. But there is a large Forest District near the town, and the Officer in charge is under the orders of the Director. The students serve a kind of practical apprenticeship while studying at the school. At the close of every year, there is an examination; those who have passed in a satisfactory manner are admitted to serve their time of practical training under selected Forest Officers, and, during this time, from the day of passing their last examination at the school, they receive pay at the rate of 1,200 francs annually (£48), until they are appointed to fill any vacancies that may arise.

10. I may here state the number of Forest Officers in the higher branch of the State Forest Service in France :—

1.	*Conservateurs*	35,	pay from	8,000	to	12,000	francs per annum.
2.	*Inspecteurs*	174,	„	4,000	„	6,000	„ „
3.	*Sous-Inspecteurs*	227,	„	2,600	„	3,400	„ „
4.	*Gardes Généraux*	379,	„	1,800	„	2,200	„ „
5.	*Candidates*	34,	„	1,200	„	...	„ „

The Candidates for appointments are called *Gardes Généraux Stagiaires*. A *Garde Général*, or *Sous-Inspecteur* has charge of a Forest district extending, on a large average, over 5,000 hectares, or 13,300 imperial acres. The *Conservateurs* and *Inspecteurs* are the local directing and inspecting Officers. At the head of the Forest Department is a *Directeur Général* under the Finance Minister; associated with him, are two *Administrateurs* who, with the *Directeur Général*, form the *Conseil d'Administration*.

11. The number of subordinate Officers, (*Gardes Généraux Adjoints, Brigadiers Gardes, Cantonniers*) is 3,581; their pay varies from 600 to 1,500 francs per annum. These persons do not pass through the Forest School at Nancy. A small number of the most deserving are every year selected by competitive examination for the post of *Garde Général Adjoint*, and afterwards, by a second examination, for that of *Garde Général*.

Thus, there are always among the higher Forest Officers in France, a few who have risen from the ranks, but they pass through a long course of practical work, and are obliged to study the scientific basis of their profession wherever they can find an opportunity.

There is a separate department for the administration of the Crown Forests in France.

12. In Prussia, the Forest School is at Neustadt Eberswalde, near Berlin. Like the schools of France and Bavaria, this Institution is exclusively devoted to the training of Forest Officers and managers of private forests. The Professor of Natural History is M. Ratzeburg, an eminent Entomologist, the author of a standard work on the insects which do damage to Forests.

Prussian system.

13. In Wurtemberg and Saxony, the Forest Schools are combined with Agricultural Colleges. At Tharand (in Saxony) the course of instruction lasts two years; and one year's preparatory training under an experienced Forest Officer is required, if the candidates wish to enter the State Forest Service. At Carlsruhe, in the Grand Duchy of Baden, the Forest School is combined with an Engineering College, and a Polytechnic Institution. At Giessen, in Hesse, the Forest School is attached to the University. In smaller countries, a combination of several institutions of a similar character makes it possible to secure the services of better men as Professors.

14. It appears needless to enter into further details. I will now attempt to sketch the training that might be prescribed to the young men, who I have suggested in the commencement of this letter should be sent out as an experiment for employment in the Forests of India. The time required for this training is three years, of which two years should be spent at a Forest School on the Continent, and one year as apprentices with an experienced Forest Officer. But as, in this instance, it would hardly be practicable to invite applications by an earlier date than the 1st of February, and as it would be desirable for the candidates to reach India by December, the period for this case might be shortened, and fixed to commence on the 1st of March 1867, and to close by the 31st of October 1869. This would give two years and eight months.

15. Applicants should not be below 18, and not above 22 years of age; they should submit satisfactory testimonials regarding their proficiency in the following subjects:—1st, Arithmetic; 2nd, Algebra (as far as quadratic equations and logarithms); 3rd, Geometry and plain Trigonometry; 4th, the first principles of Natural Philosophy (physics) and Chemistry; 5th, a good colloquial knowledge of either German or French, with the facility to read and translate the works of some Classical writer in these languages.

Proof of a fair Classical education in Latin and Greek should also be given, and testimonials of good character.

The applicants might then be directed to appear before the Medical Board; none should be admitted whose constitution does not appear fit to undergo the exposure and hardships of the life in the Forests of India.

It may, I suppose, be assumed that none would apply who cannot ride or swim.

16. From among the applicants, five would be selected, and their names would be registered at the India Office as candidates for the Forest Service in India, and each would be furnished with a letter of introduction to the Director of the Forest School to which he would be sent. For those who know French only, Nancy would be the place. There they ought to report themselves by the 1st of March. The Director would, if requested so to do, probably consent to place the young men sent to him in charge of an experienced Forest Officer, for practical training to the 15th of October, when the course of lectures commences, which they should attend for two years, undergoing the same examinations as the other students. Should I receive the needful orders before leaving for India, I would offer to pass through Nancy *en route* to Marseilles, and to make the needful arrangements.

17. In Germany, I am not certain which Forest School is most suitable at the present time for the reception of the candidates, but might make enquiries and the needful arrangements in case orders were sent me in time.

Here, also, I hope that I could induce the Director of the Forest School selected, to arrange for eight months' practical training; most of the German Forest Schools commence in May, the candidates would, therefore, have two months before and six months after the course

of studies. All, whether in France or Germany, should also be required to spend part of their vacations in any Forest district as the Director might require them to do.

18. Something may have to be done to ensure good conduct and a diligent attention to their studies. In case of gross misconduct or immorality, the Director would, of course, remove them without hesitation; but in addition to this, it might be understood that their names would be removed from the list of candidates, in case of an unfavorable report regarding conduct and progress sent to the India Office by the Director, after previous warning.

Something more might be effected by allowing to each candidate an annual sum, say £60, to be paid as a premium for having attained above a certain number of marks at the periodical examinations.

At the close of the studies and practical training, the Director might be requested to hand to each candidate a general certificate, and on the ground of these certificates, the appointments to the Forest Department in India would be made.

19. It will be necessary here to give an estimate of the cost to the candidates of the training here proposed.

According to the published regulations of the school at Nancy, the students live and board at the school, and parents or guardians have to pay the following sums for board and lodging, the purchase of the uniform, and the requisite mathematical and other instruments. The instruction is given gratuitously to those who prepare for the State Forest Service:—

1st.—On entering the school, for uniform and instruments	...	900 francs.
2nd.—For board and lodging, attendance, and other ordinary expenses, at the rate of 1,500 francs per annum	...	3,000 „
3rd.—For pocket money not exceeding 600 francs per annum		1,200 „
Total expense for two years	...	5,100 francs

or £204. I do not know whether students from England would be permitted to live at the school, and whether they would be required to pay fees for their instruction.

Under no circumstances do I think would the cost of the two years and eight months' training in France, including the journey to and fro, exceed £500.

20. In Germany, the expenses would probably come to the same amount. The fees payable by foreigners for instruction at Aschaffenburg are:—entrance money 8 florins, and 25 florins for each term, making 133 florins, or £11 for two and half years. At Tharand, the entrance money is 10 thalers, and the fees amount to 75 thalers annually, the total cost for two years being 160 thalers, or £24. Thus, if Government undertook to pay to those students who give proof of satisfactory progress, a kind of premium of £60 per annum, or £160 for the whole term, the expenses to the candidates of this education would not be more than £340.

21. The next question is, what salary should be offered to induce good men to go through the training here described? Forest Officers in India frequently live isolated, far from immediate control of their superior Officers; they require tact, consideration, and sound judgment in their constant and often difficult dealings with the natives of the country. Moreover, the fatigue and exposure which the work necessarily entails, are great, and the malaria in most of the Forests is an undeniable fact. We require, therefore, pre-eminently picked men, of a high moral character, a good constitution, even temper, and superior abilities; and it may be found, as a rule, advantageous to give preference, *cæteris paribus*, to young men of good family connections.

22. Under these circumstances, I fear that it would be necessary to offer as high a salary as £300 per annum, to commence on the day of their landing in India. They would become entitled to the rights and privileges of other Forest Officers in the Uncovenanted Service as regards travelling allowances, the Leave and Pension Rules, and promotion. But to ensure their devoting themselves with zeal to the study of Native languages, a provision should be made that no rise of their pay on account of promotion would take place previous to their passing an examination in one of the languages, as prescribed by the Government under which they were serving.

23. It must, however, not be forgotten that, under the existing organization, great hopes of promotion cannot be held out to these candidates. Should this experiment succeed, so as to induce Government to send out annually a number of men trained in a similar manner, the question of uniting the whole of the Forest appointments, those of the Madras and Bombay Presidencies excepted, into one general list for promotion, would then have to be considered. This measure might make it possible to reduce the commencing salary, and still to secure the services of better men.

24. Another obstacle against the services of good men being obtained by the plan here suggested, will be found in the fact that, at the present time, a number of young men go out to India on the chance of obtaining appointments in the Uncovenanted Service of the Police,

the Forests, and other Departments. Instances are not rare of such men obtaining, without previous special training, appointments in India worth £300 per annum, and more. Under these circumstances, candidates for Forest appointments, who have devoted nearly three years to a special training, may find themselves, when joining their Department in India, at a disadvantage as compared with others who gained time by going out to India without such training. This disadvantage can only be removed by making special training compulsory for Forest appointments.

25. I have now to explain why, in this letter, I have proposed the whole training to take place out of Great Britain.

I suppose that I may assume as granted that, in Germany and France, Forest administration is carried on on a much larger scale than in this country. Forestry there is a calling followed by young men of the best families, and the Forests are managed according to a methodical system based on scientific principles.

A short time might, indeed, with advantage, be spent with an experienced Wood Manager in Scotland, and candidates for appointments in India should be encouraged to do this, and to obtain a certificate of their having done so. But the main part of the practical training, and the study of Forestry as a science, must be done abroad. This being the case, it seems more convenient that candidates should go through the whole of their studies at one place, where the teaching is specially arranged to meet the requirements of Forest Officers.

26. Otherwise it would be possible to study the natural sciences, mathematics, the elements of surveying and engineering, in this country, either with private tutors or at one of the Universities (Edinburgh, Glasgow, Dublin, University College, London), or at the School of Mines in Jermyn Street. But for Forestry, the candidates would require to go to Germany or France, and it would, under this arrangement, be difficult to bring the whole course of studies and practical training within less than three years.

27. In conclusion, I deem it important to meet two objections to the plan here set forth. The first objection is that, the science and practice of Forestry, as it has developed itself in Germany and France, is not applicable to India, the trees not being the same, and the climate being altogether different.

To this I reply, that the fundamental laws of vegetation, that is, of re-production by seed or from stools, of nutrition, growth, disease and death, are the same in all climes and for all species of trees, which are of importance to the Forester; and that the plain fundamental principle of Forestry, not to cut more within one year on a given area, than is produced within the same time, either by natural growth or by planting, holds good wherever Forest conservancy is attempted. Though the elaborate working plans of the French and German Forests cannot, at present, be imitated in India, yet the study of a system, carefully devised and successfully carried out in Europe, will furnish the thinking Forester with useful suggestions for applying the principles of Forestry in India.

28. The second objection is, that, in the same manner as there are separate Forest schools in the different countries of Europe, so a Forest school should be established in India. To this I reply that it would be exceedingly difficult and expensive to secure for India the services of competent Professors of Forestry; that for many years to come the candidates for the higher branches of the service must be drawn from England; and that their training in India would entail great expense without any corresponding advantage; finally, that the number of junior appointments to be filled up annually is not sufficient to warrant the establishment of a separate Forest school.

29. For the subordinate service, the candidates are drawn, and must continue to be drawn, from India. For these men, the best training in India, as in France, is the work in the Forests under competent and considerate Officers. In time, we may hope to raise the best of them to appointments in the higher branch of the service. A great step will be gained when this can be done without detriment to the service. A further step will then be to educate young Natives of good families to the higher branches of the Forest service. By that time, we may hope that some of the young men now proposed to be sent out, will be qualified to teach Forestry in the school which will then have to be established in India. These are wishes which we hope to see fulfilled; the surest way to secure their fulfilment is to send out young men well-grounded in the practice and theory of Forestry.

30. The proposals of this letter being intimately connected with those of my previous letter, which I had the honour to address to you on the 24th ultimo, I have taken it upon myself to submit a copy of this letter also to the Under Secretary of State for India.

I would suggest that copies or extracts of this letter be sent to the Governments of Madras, Bombay, and the other Provinces and minor Administrations, as some of the information contained in it might interest Forest Officers.

No. 63, dated 31st October, 1866.

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

Dr. Brandis, the Inspector General of Forests in India, now on leave of absence to Europe, has transmitted to me a copy of the two letters, September 24th and October 6th, which he has addressed to the Secretary in the Public Works Department at Calcutta, making proposals for the better administration of the Forest Department, by giving facilities to Officers belonging to it, on leave to Europe, to study their profession in Scotland and on the Continent; and by sending out supplies of young men with special training in Forestry, acquired by a residence in some of the Government Forest Institutions in France or Germany. These letters have been under my consideration in Council, and I transmit to you a copy of the two letters* which I have caused to be addressed to Dr. Brandis on the points thus brought to notice by him.

* Dated 19th and 23rd October 1866.

2. You will observe that I have informed Dr. Brandis that the facilities suggested by him shall be afforded to Officers on leave, and desirous of improving themselves in Forestry; and that, whilst I have deferred the expression of any opinion on the general scheme proposed by Dr. Brandis in his first letter, I have thought it desirable at once to sanction the less extensive experiment suggested by him in the second.

3. I have done so in order that Dr. Brandis may be able to make the arrangements requisite for the success of the experiment proposed by him, before he leaves Europe on his return to India. The scheme appears to me to be drawn with considerable care and ability; and if Dr. Brandis is successful in obtaining suitable candidates, cannot, I think, fail to give much additional strength to the Forest Establishments under your control.

4. I shall await your opinion on the general proposals of Dr. Brandis, upon which there will be ample time for deliberation, as the experiment now sanctioned will render any farther steps in the matter unnecessary during the present year.

Dated 19th October, 1866.

From—Sir James Fergusson, *Bart., Under Secretary of State for India,*
To—Dr. D. Brandis, *Inspector Genl. of Forests, to Govt. of India.*

I am directed by Secretary Viscount Cranborne to acknowledge your letter of the 24th ultimo, submitting two proposals for the improvement of Forest Administration in India:—

1st.—That permission be granted to Officers of the Forest Department, on leave to this country, to go through a course of regular training in Scotland and on the Continent of Europe.

2nd.—That a certain number of young men should be selected in this country, and after a course of training in Forestry, be sent out to India for service in the Forest Department.

The latter proposal will be considered separately, as it must be viewed in connection with a subsequent letter received from you, dated the 6th instant.

In regard to the former, I am directed to convey to you the approval of the Secretary of State in Council.

Officers connected with the Forest Department, who are anxious to employ their furlough in studying Forestry and its kindred subjects, professionally, in Scotland or on the Continent, (as proposed by you), will be at liberty to do so; and, as in the case of Officers of the Public Works Department, the actual expenses incurred by them in fees and in travelling (*exclusive* of Hotel Bills), will be paid by the Secretary of State in Council, and the certificates which they obtain from the places of instruction where their course of training is performed, will be recorded in this Office, and a copy transmitted to the Government under whom they may be serving.

In the case of the two Officers named in your letter, Captain W. J. Seaton, and Lieutenant W. Stenhouse, I am to inform you that the same rule will be applied, and the fees and travelling expenses which they may have incurred on this account will be reimbursed on their producing a certificate that they have undergone the course of training proposed by you.

Dated 23rd October, 1866.

From—J. Cosmo Melvill, Esq., *Assistant Under Secretary of State for India,*

To—Dr. D. Brandis, *Inspector General of Forests to Government of India.*

In continuation of the letter to your address from this Department, of the 19th instant, I am directed by the Secretary of State for India in Council to reply to your letter of October 6th, and to that portion of your letter of the 24th September which relates to your proposal for improving the administration of the Forest Department under the Government of India, by sending out trained young men from this country to fill up vacancies as they arise in the Establishment.

2. The proposals in your letter of the 24th September are of a general nature, and involve a permanent change in the mode of filling up appointments which now prevails in the Forest Departments subject to the control of the Government of India. Before Lord Cranborne gives an opinion upon these proposals, he will await the views of the Governor General of India in Council, which will doubtless be transmitted to him when His Excellency shall have given due consideration to the subject.

3. With respect, however, to your letter of the 6th instant, in which a less extensive proposal is made, *viz.*, to send out in December 1869, by way of experiment, for service in the Forest Department, five young men, after a previous training of between two and three years in the Public Institutions of France or Germany, set apart for Forest training, Lord Cranborne is of opinion that the scheme which you have so carefully prepared may be approved at once, without reference to the Govenment of India, since their opinion could not be received soon enough to enable you to make the necessary arrangements with the authorities on the Continent before your return to India.

4. I am directed, therefore, to convey to you the approval of the Secretary of State in Council of the scheme proposed by you, with the exception of that part of para. 15 which makes it requisite for candidates to produce *proof of a fair classical education in Greek and Latin*, which does not appear to His Lordship to be necessary for proficiency in Forestry, and by insisting on which, men with a special taste for the work, and in other respects such as it is desired to secure for service in the forests, might be excluded. With this exception, Lord Cranborne is anxious that you should at once make the preparations necessary for putting your scheme into execution; and if you are of opinion that a further extension of your leave will be necessary for that purpose, His Lordship will be ready to consider an application from you for it.

5. The Government of India will be informed of the permission herein conveyed to you to carry into effect the experiment which you have submitted to them.

No. 81, dated 15th December, 1866.

From—The Secretary of State for India,

To—The Government of India.

In continuation of my Despatch of the 31st of October, No. 63, I transmit to you a copy of a further letter from Dr. Brandis, in which he reports the measures which he has taken to provide instruction for the young men whom it is proposed to send to Germany for training as Forest Officers, and of the reply which I have caused to be made to Dr. Brandis' letter.

2. I also transmit to you six copies of the particulars respecting the selection of candidates for nomination to these appointments prepared by Dr. Brandis for circulation, and approved by me in Council.

Dated 23rd November, 1866.

From—Dr. D. Brandis, *Inspr. Genl. of Forests to the Govt. of India, (on leave in Europe),*

To—The Under Secretary of State for India.

I have now the honour to report the arrangements which I have made to carry out the orders conveyed in your letter to my address of the 23rd ultimo, with regard to the plan of sending out, by way of experiment, for service in the Forest Department in India, five young men, after a previous training of between two and three years in the Public Institutions of France and Germany, set apart for Forest training.

(6)

2. Previous to the receipt of your letter, I had commenced a journey for the purpose of visiting those of the German Forest Schools with which I was not previously personally acquainted, *viz.*, Eisenach (Saxe Weimar), Tharant (Saxony), and Neustadt Eberswalde, near Berlin.

After more fully discussing the special requirements of our Forest Officers in India with my friends in this country, I have now come to the conclusion that it will be preferable to make special arrangements for the instruction of those candidates who are to be sent to Germany. A practical apprenticeship of one year, with an Executive Forest Officer, appears to us very desirable, and the time which then remains is too short for a complete course of studies at almost all German Forest Schools.

3. At Eisenach only this might be done; but here sufficient provision is not made for the study of the natural sciences. But there are good prospects of this being improved hereafter, and then I believe this school might be advantageously selected. I have discussed the whole plan with the Director, *Geheimer Ober Forstrath Grebe*, and he has promised that, should his Institution be hereafter selected for the training of candidates for India, he would undertake the correspondence on the subject with the India Office, and give all assistance in his power. Having mentioned his name, I may add that he is regarded as one of the leading men in the science and practice of Forestry at the present time in Germany. The others are *Ministerial rath von Mantel*, Chief of the Bavarian Forest Service, *Ober Forstrath Rath* at Donaueschingen, who is at the head of the administration of the forests belonging to the Prince of Fürtenberg, and *Forst Director Burckhardt* at Hanover, Chief of the Forest Department of the late Kingdom. I mention the names of these four gentlemen in Germany, as they might advantageously be consulted regarding the training of candidates for India in case anything should happen to me.

4. With *Forst Director Burckhardt* I have now concluded an arrangement which I trust will prove successful. He has agreed to undertake the special supervision of the training and studies of those candidates who may be sent to him. To provide against unforeseen circumstances, we have arranged with two of the principal Forest Officers at Hanover, Forstrath Sievers and Forstmeister Seidensticker, to take his place in case of removal.

For the practical apprenticeship of the first year, a district will be selected where the work is specially instructive for future Forest Officers in India. Mr. B. will from time to time see the young men, and ascertain the progress made by them; they will also occasionally accompany him on his tours of inspection.

During the second year and the last half-year, the candidates will serve their apprenticeship in surveying, land-measuring, and road-making; they will further be instructed in the following branches:—

1st.—Selected portions of the science of Forestry, and the principles of Forest legislation.

2nd.—A repetition of Elementary Mathematics and Applied Mathematics.

3rd.—Natural History, Botany, selected portions of Zoology, Mineralogy, and Geology.

4th.—Chemistry and Natural Philosophy.

5. During the first year, the candidates will be furnished with board and lodging in the family of the Executive Forest Officer under whom they will be placed; afterwards they will live at Hanover, either with Mr. Burckhardt, or with another of the Forest Officers at the place. This arrangement appears to us desirable to save time, and to facilitate the supervision of their studies.

From Hanover they will, from time to time, be sent to different Forest Districts, to become acquainted with the different kinds of forests, and the various methods adopted for their management.

6. In conjunction with the Director I have drawn up a programme of the subjects to be studied, which will serve as a guide for the final examination to be held at Hanover.

We have also drawn up a budget of expenses, of which an abstract is given in a Memorandum at the foot of this letter. Fees are provided for the Director, as well as for all those who are to impart instruction. It is an essential part of this scheme that no aid is to be given gratuitously, or as a favor.

7. Under these arrangements, two years and a half will be sufficient for the course of training proposed, which will then be completed by 1st September 1869. If my proceedings are approved, I would suggest that Director Burckhardt be informed how many young men will be sent to Hanover as soon as possible after the candidates have been selected by the Secretary of State, to enable him to make the needful arrangements before their arrival.

8. He has undertaken to furnish the following reports:—*First*, half-yearly on the progress of the candidates, and on their conduct. On the ground of these reports the promised half-yearly stipend of £30 might be paid. *Second*, a Report on the final examination at the end of the course. These communications will be written in German; but there will, I suppose, be no difficulty to their being translated at the India Office. Communications from the India Office would of course be in English. Mr. Buckhardt has also offered to undertake the correspondence with parents or guardians, and to arrange the payment of fees, board and lodging, and other money matters.

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9. For those candidates who are not sufficiently acquainted with German, but are familiar with French, I have made the following preliminary arrangements :—

They should be furnished with letters of introduction from the India Office, and report themselves at Paris to *M. Serval, Sous-Chef du Bureau central et du personnel de l'Administration Centrale des Forêts.* Thence they will be sent to a Forest District, to serve their apprenticeship under an Executive Forest Officer. On the 1st November the course of instruction at the Imperial Forest School at Nancy commences, and the candidates will attend the school to the end of the bi-ennial course, that is, to the 1st September 1869.

Some of the details of the arrangements in France will be settled by me personally with the Officers at Paris and Nancy. On these points I shall hereafter have to submit a supplementary report.

10. One point which I consider a disadvantage I must note now. In France, no fee or *honorarium* will be received for the instruction of Forest Officers or candidates for the Forest Department. I have repeatedly written on this subject to *M. Serval* and to *M. Lorentz, Vérificateur Général des Aménagements,* and I have invariably received the reply that such a thing is inadmissible in France. The following passage from a letter of the last-named Officer will shew the view taken on the subject by the heads of the Forest Administration in France :— "Vous avez bien fait de pressentir l'acquiescement du Directeur General, en vous addressant à M. Serval, mais je prévois la réponse en ce qui concerne la rémuneration dont vous m' avez parlé—le concour des agents forestiers á l'instruction de MM. Seaton et Stenhouse sera gratuit; c'est un devoir international qu' ils rempliront avec le plus grand plaisir et dont notre administration saura d'ailleurs leur tenir compte."

11. The arrangements here described have been made in a semi-official manner; but with the consent of the chief authorities, it might perhaps be useful to inform the British Ambassadors at Paris and Berlin that these arrangements were made with the sanction of Her Majesty's Secretary of State for India.

12. Regarding the second part of my duty,—to induce young men to become candidates for the appointments offered,—I regret that I have not yet been successful. I would, therefore, propose to introduce a few small alterations in the conditions, so as to remove some objections made to me :—

1st.—It might suffice to fix a minimum age of 17, without any maximum limit.

2nd.—Natural Philosophy and Chemistry are not taught in all schools; they might be omitted from the list of necessary acquirements, but preference should be given to candidates acquainted with them; preference might also be given to those who are practised in free hand and plan drawing.

3rd.—Two years and a half may be substituted for two years and eight months.

4th.—The pay of the appointments, which has been fixed at £300, might commence from the day of signing the Covenant.

5th.—A free passage to India might be granted.

13. Regarding the two first points, I would remark that, should it be determined to continue the practice of sending young men abroad to be trained for the service in the Forests in India, the original proposals might be restored for 1868, long notice being given, *viz.*, age between 18 and 22, the Elements of Natural Philoosophy and Chemistry, to which plan and free hand drawing might be added. These acquirements are an almost indispensable preparation for the professional studies, less so under the arrangements made for Hanover, as the instruction will be private, and can adapt itself to the wants of the students.

The duration of the course of training, two years and a half or three years, had best be settled after some experience of the arrangements now made. The proposals regarding free passage, and the date from which the pay is to commence, will, if approved, place the nominees of the Forest Department on the same footing as Civil Engineers sent out for the Public Works Department.

14. I regret that a much longer time has elapsed than I anticipated before I could make the arrangements here reported, but I trust that a solid foundation has now been laid for the training of Forest Officers for India.

15. Enclosed is the draft of a paper which might be printed for distribution. Appended to it are—

I.—The Uncovenanted Leave and Pension Rules.

II.—The form of Covenant.

III.—A Memorandum of the course of instruction proposed.

I would also suggest that an advertisement should be put in the public newspapers, saying that applicants will receive a statement of the conditions at the India Office.

16. As I foresaw some time ago that it would be impossible for me to complete the arrangements here detailed by the 20th instant, the day for which my departure had been fixed, I have, with reference to the 4th para. of your letter under reply, cancelled the passage I had taken for that day. I have still a few arrangements to make concerning the instruction

of Forest Officers on leave, and with reference to this matter; to meet Messrs. Seaton and Stenhouse in France. I hope to be able to leave Marseilles by the steamer of 5th January, but would beg permission to write again on this subject.

Abstract of the Budget expenses for the training of Candidates in Germany.

	Thalers.
First year.	
Board and lodging, including remuneration given by the Executive Forest Officers	450
For Examiners and journeys	150
„ gun, rifle and other outfit	200
Remuneration for the Assistant to the Executive Forest Officer	50
„ „ Director	150
Total for first year ...	1,000
Second year.	
Board and lodging at Hanover, including remuneration for the Director ...	700
For excursions and journeys	300
Fees for lessons and other instruction	500
Total for second year ...	1,500
Last half-year.	
One-half of the amount estimated for the second year	750

NOTE.—The amount fixed for board and lodging is intended to include washing and remuneration of servants.
The total expense for 2½ years is estimated at 3,250 Thalers, or £ 487-10.

D. B.

Dated 29th November, 1866.

From—H. MERIVALE, Esq., *Under Secretary of State for India,*

To—DR. D. BRANDIS, *Inspector General of Forests to Government of India.*

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 23rd instant, reporting the result of the enquiries which you have made as to the arrangements best adapted for securing efficient training and education in Germany and France for the young men who may offer themselves for service in the higher grades of the Forest Department in India.

I am directed to convey to you the thanks of His Lordship in Council for the trouble you have taken, and the careful manner in which you have prepared the scheme which you have submitted for sanction. Lord Cranborne thinks that you have shewn sufficient grounds for the several deviations which you have proposed from the plan as originally sanctioned by the letter from this Department of the 23rd ultimo.

The Prospectus and Covenant will, therefore, be printed in the form contained in your letter under reply, and an advertisement will be issued, inviting candidates to apply.

As you express your intention of writing again on the subject of the date of your departure, I am only directed now to sanction your departure for India by the mail which leaves Marseilles on the 5th of January, if you cannot complete the necessary arrangements before that date.

General training of Forest Officers for India and proposal to send out five young men trained for the Department.

Read Minute of Mr. Brandis dated 25th April 1867.

Read Mr. Secretary Campbell's letter No. 1102, dated 6th May 1867.

Calcutta:
PUBLIC WORKS DEPARTMENT PRESS,
1867.

Read Mr. Secretary Campbell's letter No. 1016, dated 6th May 1867.

Ordered that these papers be communicated to the Conservator of Forests in continuation of the Proceedings dated 8th April 1867, No. 816, and that he be requested to submit his views on the proposed system of supplying the wants of the Forest Dept. by training men in Europe. The reply of Mr. Cleghorn to the order dated 27th April 1867, No. 950 may be included in the report now called for.

Captn. Pott's Conservator of Forests Despatched

4th May 1867

Revenue 1867 - Oct.
No of Govt. for the year
No. 4102.

From

The Asst. Secty. to

the GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

REVENUE—FORESTS.

To From Conservator of Forests

dated 12th June 67 No. 857.

CIRCULAR No. 6 FOREST.

Dated April 11, 1867.

Received

E. 1

Trained Assistants for the Forest Department of India.

No 1016-4 dated

with Order.

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