

Educational (1904) Department.

ORDINARY MS.

G.O., No.

DATED

INDEXED

[Despatch Abstract.

Technical School of

In January 1870, Garrison began by
that he had refused to
by him his St. Louis office
into the Court proceedings

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
4	-1-53						

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

EDUCATIONAL DEPARTMENT.

C. No. 198 From the K. V. Govindan Nayar No. , dated 27-1-1904.

SUBJECT.

Technical Scholarships

K. V. Govindan Nayar, an unpassed candidate employed as a temporary clerk in the Settlements department of the Board's office, enquires whether the scheme of technical scholarships referred to in the correspondence in P.O. No. 504 dt 9th October 1903 has been extended to Madras. He has passed through the Commercial School at Calicut and seems to be the holder of a diploma in Commerce.

2. In the last paragraph of the letter from the Govt of India on page 2 of the P.O. of October last that Govt says that it will be glad to consider any suggestions which the Govt of Madras may have to offer for the establishment of a technical scholarship in any other branch of industry which can thereby be developed, if a suitable candidate can be found. The Correspondence was communicated to the Director but no suggestions have yet been received from him.

The present applicant may therefore be informed that the scheme has not yet been introduced into Madras, but that the matter is under the consideration of the Director.

* Other than textile industry in Bombay & Mining industry in Bengal.

6/2/4

The draft placed below is submitted for approval.

By 4 - 1 Jan 1902
5/2/4

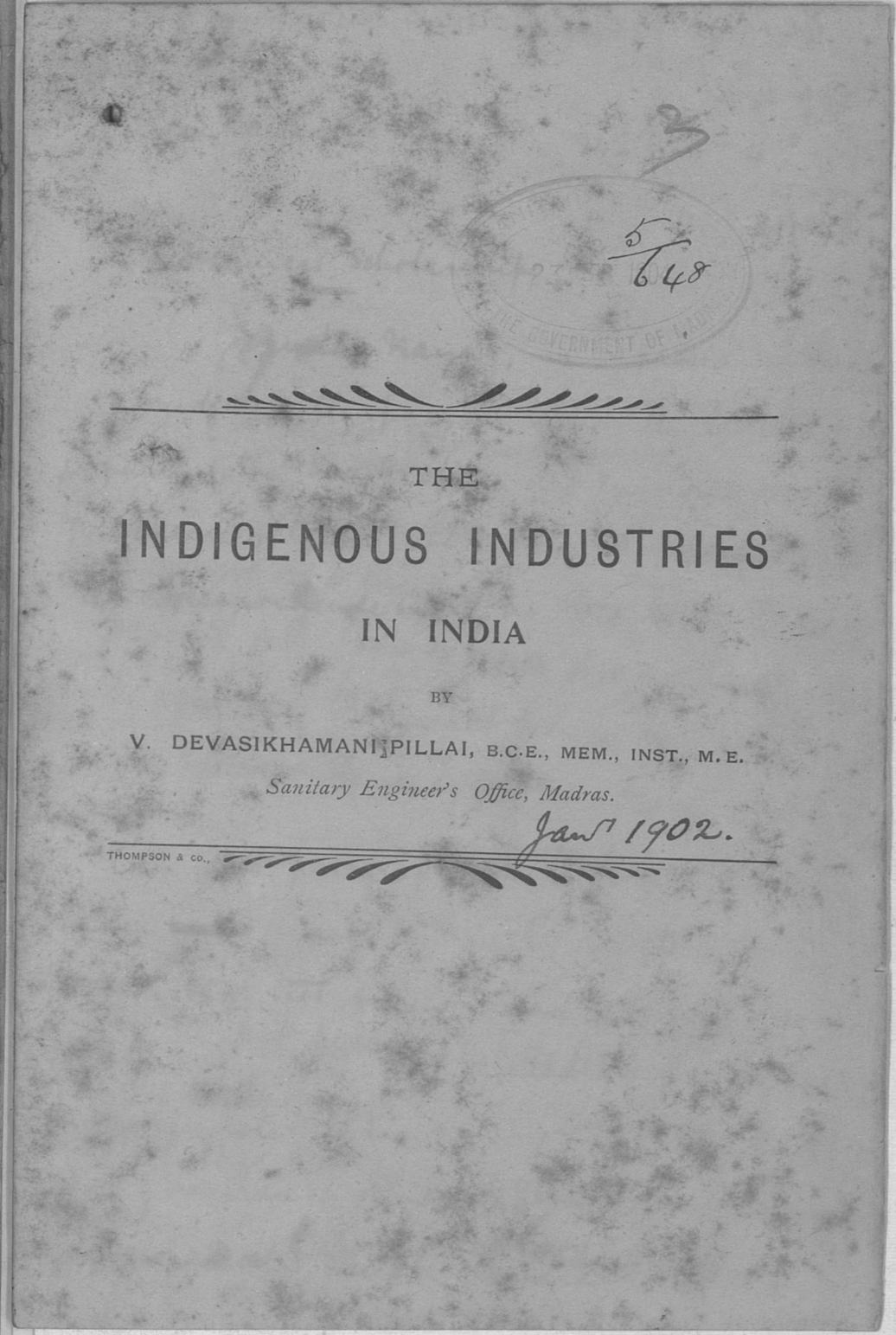
Technical Education

N. V. Govindan Pillai, an experienced and
competent as a temporary clerk in the
Department of the Board's Office and
the scheme of Technical Education
in the Government of Madras. The
1902 has been submitted to the
through the Government of Madras.

In the last paragraph of the letter from the
President of the Board of Technical Education
that last paragraph that will be good to consider and
suggestions which the Board of Madras may have
offer for the establishment of a Technical Education
in any other branch of industry which can be
developed for suitable conditions in the
"Board" the Government of Madras.

The Board of Technical Education
the scheme has not yet been introduced into
Madras but it is in the hands of the
Government of Madras.

5/2/4
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THE

INDIGENOUS INDUSTRIES

IN INDIA.

Under this heading was published some time ago in all the local papers a Memorandum in full as drawn up by Mr. Alfred Chatterton at the request of the Hon'ble Sir Edward Law, Finance Minister. The author's Indian experience is not confined to the Indian artisan only, for his connection with the College of Engineering has given him a fair idea of the capabilities of the Indian student, and as such we could not think of a more competent officer than the one chosen to advise on the subject. Almost all the suggestions made in the Memorandum, regarding the Indian artisan, the training he is to receive and the high class work he is expected to turn out, are very hopeful. As one has to sympathise more with the Indian student than with the Indian artisan, and as nothing hopeful is said about him, it is proposed to make a few suggestions on his behalf. The Indian artisan does not suffer so much as the Indian student. The former can at least get a bare living with the help of his crude trade, but the latter with the kind of education given him is mercilessly thrown into the world to starve without a trade, and the times have past nearly twenty years now since the commencement of his burdensome life. Twenty years ago the best men had rich rewards in Government service ; but now alas ! no

comfort to the soul. The system of Indian education is entirely to blame. Take away Government service, the best of our men will have very hard times of it.

The Victorian era.

The progress made during the Victorian era has no parallel in history; the key-note of this progress is found in the application of the physical sciences to the promotion of the useful arts. A thousand years of thought and speculation had less influence on the material welfare of the human race than have now a century of right methods of work in science. The genius of Faraday struck the key-note in time. The most thorough and systematic research initiated by him, opened the eyes of eminent scientific men and wise manufacturers to the profitable application of science to the industries. Everyone saw that the secret of success lay in those *paths of study and practice which breathed science into matter*. Universities either amalgamated research work along with their usual course of education as in Germany or instituted separate Technical Colleges and Public Laboratories for the advancement of 'Practical Science,' as in America.

Higher Education.

In India Higher Education was advanced purely on the theoretical side and the advantages progressive nations in foreign countries derived from the combination of the practical with the higher theoretical studies were not realised. If we were to go back and reorganize the whole of our educational system, eliminating the useless studies and introducing studies of a practical nature, and wait for the fruits, it would mean another twenty years, before any good resulted. And further Indian finance will never be able to establish Laboratories, Workshops and Technical Schools, in the manner and on the scale, the civilized nations have done in their

own country for the benefit of their *own* children. If we were to introduce improved methods of handicraft as suggested in the Memorandum under review, we have to look to the uneducated but skilled artisan of the country who has earned a national reputation for being backward in Higher Education, who can only learn what is taught him, who can imitate not originate, who without a correct knowledge of science cannot take advantage of the experience and progress the leading nations have bequeathed to the world. As an illustration of the application of high mental culture to practical subjects, take the bicycle and the sewing machine, trace the motions mentally from the point where force is applied to the point where the result is obtained, and then examine if the mental culture of the skilled artisan is able to stand the strain; or again trace the improvement in the bicycle from the date of its first invention to the date of its perfection, or trace the improvements of any one of the thousand machines the world has brought into existence and perfection, and then see if the mental culture of the Indian artisan is able to cope with the creative and constructive nature of the work before him. Can he with his perfected skill as a "hand worker" suggest new methods, strike out new paths of work or adapt existing labor-saving inventions to our wants. We cannot but help answering the above questions in the negative. A cultured brain is a *sine qua non* to appreciate and adapt the perfected inventions and industries of the civilized world. The physics of steam and heat, the chemistry of coal, the theories of electromagnetic currents have done more to the material progress of the world than all the skill of the hand-workers of the world put together. And, therefore, it is suggested that the *brain workers* of the country should be taught the value of *manual training* as a healthy supplement to

their College training. It is only then that we can hope to find good results in a short time. We have to look to the graduates in physics whose high attainments in theory when supplemented by proper practical training will do great credit to many a telegraph and electrical engineer. We have to look to our graduates in chemistry whose thorough knowledge of the theory, when supplemented by a knowledge of the methods of chemistry as applied to the useful arts, will be an acquisition to many a chemical manufactory. We have lastly to look to our local engineers whose high and complete educational training when supplemented by a few years' training in European workshops or manufactories will so thoroughly equip them for all the purposes to which mechanical engineers are known to be of service in these times of machines and inventions. We have in our Colleges the student of physics, the student of chemistry and the student of engineering, who have learnt in less than half a century "*the right methods of work in science,*" and therefore can learn without difficulty with an additional two or three years' training in the Schools, Laboratories or Workshops of Europe, America or Japan, *the application of the Physical Sciences to the promotion of the useful arts.* It is in the utilization of these College men that the best energies of Government should be exerted. It is here we can hope to sound the key-note of success. The proposal is therefore briefly as follows. The State should undertake to send up a number of men from India, every year say three successful students in physics, three successful students in chemistry and three successful students in mechanical engineering (one for each branch from the three Presidencies) to Europe, America or Japan, to be trained in the Applied Sciences. This is the procedure the State must adopt without any more loss of time. Capitalists

in India will then see their way to send such men of their own accord. Liberal-minded men charitably disposed will surely bequeath rich endowments for such a training. Native States will again follow the noble example set by Government. Then private individuals will open their eyes and send their children, when they see the usefulness of men trained in Europe, America and Japan in industrial arts. It is not possible to have any institution in India on the lines and on the scale the progressive nations of the world have established and organised for themselves for years to come, and therefore the best advice would be to send the 'picked youths' of India to foreign countries where proper Technical Training is available.

Technical Colleges.

The few Technical Colleges, such as the Engineering and Agricultural Colleges, do not attract a large number of students partly owing to the limited nature of their prospects after succeeding in a trying examination, partly owing to the limited number of callings outside Government service, and partly to the want of confidence in the public to entrust to these successful candidates the management of private enterprises which are indeed very few. There cannot be any other reason for the above state of affairs than that the equipments for a sufficiently thorough and practical education have not been organised in India. In the so-called Technical Schools established in Madura and Trichinopoly and in the Madras School of Arts, the attempts to organise "a flourishing artisan community" is not quite a success. First, because the Instructing staff is only of local manufacture; secondly, no new trade is taught on approved methods of manufacture; thirdly, the recipients of the training are youths of very inferior education and are therefore incapable of thinking out for themselves new paths of work after leaving the

institutions; and, lastly, respectable and well-to-do youths have a natural aversion to receive instructions in these institutions. These require complete reorganization. The most feasible and cheap course to be adopted would be to amalgamate these institutions with High Schools and Colleges, just as the gymnasium grounds are located, where manual training may be made optional so that students who prosecute higher studies may get the advantages of a manual training. One is obliged to suggest such a step because India cannot afford at present to have the luxury of a successful Technical Institute.

"The Establishment of a Prosperous and Flourishing Artisan Community."

The artisan community in India form an entirely separate class who may be called the born mechanics of the country, and as such, it will comprise the fittest persons, under proper organization and skilful direction, to attain efficiency as hand workers. A majority of these skilled artisans by virtue of their hereditary skill turn out excellent work in our local workshops and factories, private and public; they readily appreciate the advantages of improved tools, as every good workman ought to, and they have been using good tools for over a quarter of a century. The only training this community requires is an elementary knowledge of science taught in a popular practical way. It is our object to establish a 'flourishing artisan community' we have to carefully consider the commercial value of the articles manufactured by a class who are to remain as "hand workers," whose "energies are to be directed into channels where machinery is of little use," and also take into consideration the fact that the discovery of a market for the finished work is not an easy task. Therefore the idea expressed in the Memorandum of giving superior training

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"to better fit the artisan of this country to meet the stress of western competition" must be considered. If we open our eyes and see what foreign manufactured articles come into the market, what articles daily used by our community are largely manufactured by other countries, we are inclined to believe that the hand labor of India must sooner or later yield to the rapid advances labor-saving inventions are making in recent times. It is only a question of the survival of the fittest. If we are to succeed, we must adopt improved methods of manufacture and improved machinery, and manufacture those articles for which the public have *already cultivated a taste and created a want*. It is not again unknown to employers of labor in India, how many capable artisans have to remain without work during several days in the month. The more foreign countries turn out work for India under improved methods, the less work will India find for its 'hand worker.'

"Protection of home industries" the "Key-note" of success.

The protection of 'Home Industries' has no doubt been a healthy incentive for the furtherance of industry in America and Japan. But to call it the key-note of their success is not clear.

The idea of developing industries "where machinery is of little use," the idea of remaining contented with mere "hand work," never struck the Americans and the Japs. At the beginning of the 19th century, the discoveries of Faraday and others sounded the "key-note" of the World's Progress. The innumerable experiments of Faraday in chemistry, electricity and magnetism, his scientific and experimental method of investigation showed to the world the method of applying science to

useful arts. The versatile genius of America, took time by the forelock. Every branch of industry received the benefits of science and the mechanical arts, and America is to-day proud to see the fame of her sons dazzle the eyes of the most cultured of the civilized nations of the world. An enumeration of a few of the American men of fame will not fail to create in our minds a grand and noble idea of the excellence to which human powers can attain under proper conditions. If these men had lived in India a few centuries ago, each one would have a temple built in memory of him and worshipped as so many gods. Charles Goodyear immortalized himself as the inventor of the process of vulcanization of rubber. Peter Cooper developed the glue industry of the country. Morse was able to harness the most delusive of nature's forces for the uses of man; he placed electro-magnetic telegraphy on a practical basis. Elihu Thompson organized the Thompson Houston Electric Company, his inventions in electric welding and brazing and his experiments in alternating current induction have won for him an international renown. Captain John Ericsson made several improvements in marine engineering and built the iron gunboat known as the monitor, which changed the whole course of naval construction throughout the world. Elias Howe invented the sewing machine and is said to have realised 2,000,000 dollars from his invention. George Henry Corliss will ever be remembered by steam users. He completely revolutionized the construction of the steam engine. His invention, his famous valve gear, economised steam and insured uniform speed under the most varying load. The type revolving press invented by Hoe is the grandest triumph of mechanical genius, the paper travels through the press at the rate of 32½ miles per hour! The Bell Telephone and the Harveized

steel armor plate have given rise to several new industries. Thomas Alva Edison and Nikola Tesla are modern names too familiar to require any note. This is a very imperfect list and notice of the men of fame. These men sounded the key-note of America's fame and prosperity. The protection of Home Industries was only an incentive for quick progress.

Progress in Japan.

It is within the memory of many of us that Japan rose from a state of semi-barbarism to that of high civilization. With Japan the movement started was a national one. With us it is quite different. Mr. Williams Griffis, a Professor of Chemistry in Japan, wrote to the *Scientific American* in February 1872 as follows:—"The Japanese while liberally engaging Professors, Engineers and Agents are yet determined not to let Japan become as India, nor be passive recipients. They have at least three hundred picked young men studying in America and Europe, and on their return they will personally engage in the business of superintending the great Public Works of the country." It is nearly thirty years since Japan started the race of progress. It has risen within this period to be an enviable rival in arts, industries and commerce, in the best equipments of electrical, mechanical and naval engineering and in all the requirements of a civilised nation.

India wants leaders in different industries, men who can examine the raw materials of the country and who can by the application of cheap labor and improved machinery and process of manufacture meet the existing demands of the country. India wants men who can deliver popular lectures on scientific subjects to convince the Indian capitalist on the methods of chemical industries. India wants men who can give illustrative

lectures on the use of steam and machinery. India wants a public laboratory and a machinery museum, where much useful information could be made available.

We are fortunately placed at the beginning of the 20th century, which has proudly inherited the accumulated fund of scientific truths in almost every branch of knowledge, which the gigantic intellects of Europe and America have perfected in its laboratories by a century of patient persevering and costly researches. We do not want to produce men like Faraday, Leibig, Hoffman or Bunsen or men like Watt, Stephenson, Jule, Fairburn or Bessemer, or men like Crookes, Edison or Tesla to make new discoveries or great inventions. We want men like Huxley or Tyndal or men like Thurston of Sibley College who can impressively explain and illustrate what has already been discovered or invented. We should like our picked Indian youths who possess capacity, to go and learn a trade in English workshops and laboratories, in chemical manufactories and dye-houses, in large mechanical and electrical engineering works. The State should open this grand work, and guide the blind Indian brain worker and capitalist.

Educational (1904) Department. ⁹

CURRENT No. 198

From

[Name]

H. V. Govindan Sagar

[Designation]

[Station]

Triplicane, Madras

No.

Received

2

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1904.

Dated

27

1

1904.

Enclosures

Registered

3

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1904.

SUBJECT.

Requesting to be informed whether the scheme of Technical Scholarship for Technical Education sanctioned for Bengal has been extended to the Presidency.

BACK PAPERS.

505-72-2-9-03
504-9-10-03 Copy
695-28-11-07

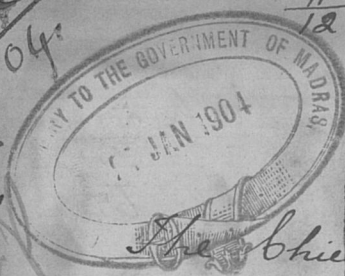
10142-3-13-3-02 Copy

FURTHER PAPERS.

O.R. 13
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L.

V



11/12 Tiruattiarwaram
Peta. Road.
Triplicane.

27th January 04

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The Chief Secretary,

Govt. of Madras.

Sir,

In the issue of the Madras Mail of the 23rd instants, there is a Telegram to the effect that a Scheme for awarding Certain Scholarships for certain branches of Technical education has been started in Bengal, and the same will soon be extended to Sister provinces also.

May I take the liberty of requesting you to kindly let me know whether that Scheme has already been extended to the

the Presidency of Madras.

Copy of the Telegram is herein enclosed.

I beg to remain,
Sir,

Your most obedt Servt.
K.V. Govindan Rao

The Supreme Legislative Council.
YESTERDAY'S MEETING.

At the Council to-day, the programme was carried through as announced.

THE TECHNICAL SCHOLARSHIPS.

The Hon'ble Sri Ram Bahadur's questions in relation to the Government Scholarships elicited an explanation from Sir Denzil Ibbetson to the effect:—(1) that Japan was excluded owing to the difficulties of its language and the incompleteness of its development, but Indian Government Educational officers were being sent there to study its methods; (2) that the scheme of scholarships, so far published, applied only to Bengal, but would be extended to apply elsewhere, and to industries other than mining; (3) that agriculture was at present excluded owing to its vastness and the desire of the Government to encourage alternative industries.

1,000-7-5-02

READ ALSO :—

C. No. 198, From the K.V. forindan Nayan, No. _____, dated 27-1- 1904

ORDER

No. 95, dated 8. 2. 1902

hi

K.V. Govindan Nayar is informed that the scheme of technical scholarships referred to by him has not yet been introduced into the Madras Presidency.

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Aug. 22

6/2/4

To KV-Grindan Hagen
copy to the DPQ ✓

10/2/4

is repeated in
informed that the
relationship referred to
has been introduced into the
original document.

Repeating the
original for
the original document.

When given for copying _____
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When examined _____
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READ AGAIN G.O., No. _____, DATED
190

CURRENT No.

ENCLOSURES TO G. No.

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A A A A A A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

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