

R 433
WTS

W. A. SHEWHART'S COLLECTION

Why did I go?

Talked about hours
and showed about 60
Kodachrome slides.

from
started
series
my
slides
to
Lancaster
May 28/48

What did I do?

What was accomplished

- RL Jones
- R Brown
- H. Conway
- RH Wilson
- Red King
- Paul Findley

- 10. Fordiller
- W.C. Kenney
- GH Edwards
- HA Dodge
- K. Honaman
- TC Fry

was

at part } 0513
 } #152
 } 43/44

Waste
time

one + trip to India for work matters telegram

INVITATION

4/22/4

1. Indian Statistical Institute

- 1.1 Staff of upwards of 275.
- 1.2 Noted for contributions to
 - a. Mathematical statistics
 - b. Sampling surveys and design of experiment.
- 1.3 Sankhya - one of three best journals in mathematical statistics.
- 1.4 Prof. S. N. Bose of the Einstein-Bose statistics team was acting director of the IMS and made all preliminary arrangements in India for my visit.

2. Indian Standards Institution

- 2.1 Organized in 1947 along lines of ASA and BSI.
- 2.2 Dr. Mookerjee, Minister of Supply, is president.
- 2.3 Dr. Lal Verma - Ph.D. in physics from Cornell - is director.

3. Indian Science Congress

- 3.1 Each year invites foreign scientists - expenses paid out of a government grant for this purpose.
- 3.2 Last year, ¹⁹⁴⁶ about five from England and five from USA were invited and included Sir Charles Darwin from England and Harlow Shapley from the United States. I was invited then to go over but felt that the industrial situation was too chaotic. This year: Prof. Alexander Findlay from England, W.A.S. from U.S.

showed about 100 slides
1 1/2 hour session

FUNDAMENTAL OBJECTIVE

India's need for industrialization

English policy prior to August 15, 1947

Almost no Indian factories

Only English as managers and directors
(Tata's a glowing exception)

No steel fit for airplanes.

No standardizing body)

No metallurgical body to cooperate

Shortage of men with the know-how of production

Labor troubles

No carbon for microphones

No paper for condenser

No plastic

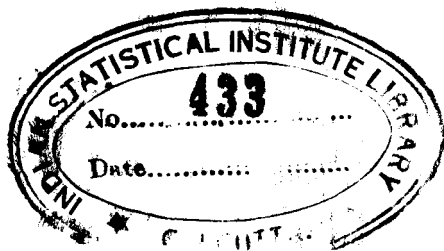
Airplane development short of 14 different materials; hence must depend upon imports

Situation in the production of ordnance

Financiers lack of interest in quality

Criticism of Indian products in international trade.

The objective of my visit as I saw it was to cooperate with the Indian Standards Institution and the Indian Statistical Institute, the Council for Scientific and Industrial Research, and other scientific and engineering groups in an effort to help increase production of goods of standard quality through the application of statistics in research, development, design, specification, production, and inspection.



SETTING THE STAGE

Conference on Industrial Development in India

Held in New Delhi, December 15-18, 1947,
under the auspices of the Government of India
Ministry of Industry and Supply.

1. To increase production
2. To increase transportation
3. To decrease labor troubles

Dr. S. P. Mookerjee, Minister of Supply, was chairman of the conference and in introducing me said, among other things: "It is obvious that the sound development of our own export trade will also depend very largely on how far we succeed in our efforts to improve the quality of our exported goods. How this objective can be attained without any undue increase of cost of production is a question which we have requested Dr. Shewhart to deal with in consultation with the members of the Indian Standards Institution."

SOME NECESSARY BACKGROUND

Population - Increasing at rate of 4
million a year

India - 1-1/2 million square miles
nearly 400 million population

Russia - 8-1/2 million square miles
200 million population

Area: India, Australia, Brazil, U.S.
Canada, China, Russia

Population: Australia, Canada, Brazil,
U.S., Russia, China, India

6,000,000 refugees

Religion

Hinduism

Rig Veda and other Vedic influence

No one leader like Christ, Mohammed, or Zoroaster.

Gods: Shiva, Vishnu, Brahma

Caste

Transmigration

Sacredness of rivers

Burn dead and throw ashes in river

Hinduism is the most confused, confusing and distinctive of all religions: it is a socio-religious order.

Parsis - followers of Zoroaster; hence will not pollute air or earth - hence feed dead to vultures - sanitary difficulties. (Tata family)

Jains - offshoot of Hindus with leader - will not destroy any life, including mosquitos.

Moslems - Have a leader, Mohammed - bury dead and build monuments. Shall show some. Succession of conquerors.

Buddhists

Sikhs - leader

Christians

"The secret of a happy, worry-free life is to achieve a religious view of life; the Hindu or religious view is to make the spiritual goal (Paramartha) the primary objective of human life; the spiritual goal is man's realization of his divine nature (Atma); all religions contain this truth; this truth can accordingly be known by anyone if his devotion is equal to the task."

All of the usual human goals such as seeking of money, or power, or pleasure are regarded as disintegrating influences. The happy integrated persons are those who organize their lives on a spiritual basis. Swami Akhilananda offers a special kind of a spiritual basis which might be difficult for an earthy person with lusty appetite and competitive spirit to accept until at least well past middle age and thoroughly frustrated by life's struggle.

Review of Hindu Psychology. Its Meaning for the West, by Swami Akhilananda, in JI. Phil., April 22, 1948.

Food

No food or drug laws.

A 6% shortage in food would cause a severe famine.

No carbon being returned to the soil.

Cows eat garbage

No fertilizers

Scientific agriculture well under way.

To support the growing population they must have exports of manufactured goods in order to buy food; so industrialization is a very serious matter.

Education

1. 10% literate
2. hundreds of dialects
3. No public school system.
4. Universities
5. Books and magazines - Statesman 30,000
Probably 5,000,000 readers

History

Industrial civilization

Other early "

Asoka (273-232) B.C.

Mogul rulers - Taj

Congress party

More walled cities than any other country.

Communication

Telephone

Radio

Telegraph

Rail

Air

Akbar (1556-1605)
Jahangir (1605-1627)
Taj Mahal - Shah Jahan (1627-1658)
Aurangzeb (1658-1707)
buried at Daulatabad

WHAT WAS DONE

1. Travelled 10,000 miles

Bombay, New Delhi, Calcutta, Patna (via Benares), Jamshedpur, Hyderabad, Bangalore, Mysore, Trivandrum, Cape Comorin.

2. 2-1/2 days in five committee meetings.

Indian Standards Institution

General Council

Quality Control Committee

Indian Statistical Institute

Quality Control Society

3. One week conference on standardization and quality control at Presidency College.

4. 30 public lectures (over 2000 people)

Ministry of Supply conference

Indian Science Congress

Institute of Statistics

Institute of Metals

Institution of Engineers

Engineering Association

Indian Council of Agricultural Research

Indian Textile Association

Telecommunication Engineers Association

Bombay Mill Owners Association

All India Mfrs. Assn.

Indian Chemical Mfrs. Assn.

School of Economics

Universities

Rotary Clubs

5. Fourteen large conferences.

(More than
375 per

Indian Standards Institution
All India Mfrs. Assn. *Organization*
Hirachand companies - directors
Kamani Metal Works - officers
National Radio Company - officers
Khatau Mills - officers
Indian Chemical Mfrs. Assoc.
Indian Statistical Institute
Industrialists and govt. off., Bangalore
Industrialists, Trivandrum

6. 28 official dinners

Nehru

Governor General, Patna
Vice-Chancellor of Patna University
Sir J. J. Ghandy luncheon
Dr. Verman's luncheon
American Alumni dinner
Sir Bhatnagar tea
Mr. Joshi's tea, Hyderabad
Board of Directors, Tata, luncheon
Taj Mahal dinner - industrialists - 26
Tea at Khatau mills
Luncheon, Bengal Chemical & Phar.
" Pres., Joy Enging Works
" Birla group
" Dr. Mookerjee, Sch. of Med.

Factories visited

3 textile mills
2 chemical and pharmaceutical
1 chemical and fertilizer
1 jute mill
1 paper mill
1 radio manufacturing
2 telephone mfg. and repair
1 electric fans
1 tobacco
1 glass factory
1 porcelain
1 bicycle
1 sandal oil
1 salt field
1 pressed metal 1 sheet metal
2 electrical products
1 tool
1 aircraft
1 silk mill
1 steel mill
1 locomotive
1 handicraft

Also talked with managers or owners of
3 sugar mills, 1 mica factory, 1 ship-
building, munitions, electric batteries,
and several chemical factories; mintmaster

Laboratory, Inst. of Statistics, Calcutta
Chemical Department, Bombay University
Inst. of Psychological Research, Patna
Engineering Research Laboratory, Hyderabad
Museum
Osmania University
Textile Technical Institute
Forest Research Laboratory
Mental hospital
Chemical Laboratories - CSIR
Shri Chamarajendra Tech. Inst., Mysore
Silk farm
Tapioca research farm
Indian Institute of Science
Occupational Institute

What was accomplished

1. Quality control committee of Indian Standards Institution
Textile Commission/Sec 4 ISI
2. Quality control society.
3. Committee for Scientific Research and Development.
4. Quality control in Indian Statistical Institute.
5. Industrial Finance Corporation and Quality Control - The Reserve Bank of India suggests "that when the technical advisory committees are set they should be asked by the Industrial Finance Corporation to regard the existence of scientific quality control systems as one of the important criteria for judging applications".

Jamsheapur

Sir J. J. Ghandy, Director
J. S. Vatchagandhy, Chief Metallurgist
Phiroz Kutar, Works Manager

Hyderabad

Mr. J. V. Joshi, Hon'ble Minister
Commerce and Industries

Mysore

Mr. H. C. Dasappa, Minister of Industries
Sri A. Ramaswamy Mudaliar, Dewan

Travancore

Major D.L.Deshpande, Principal,
Engineering College

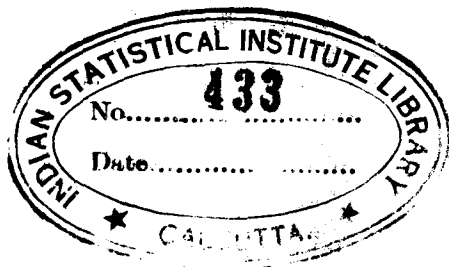
U. S. Nair, Professor of Statistics
Travancore University

P.G.N.Unnithan, Dewan of Travancore.

New Delhi

S. P. Mookerjee, Minister of Supply

Sir Shri Ram
Sir. S. S. Bhatnagar, Pres., CSIR
Dr. Lal Verman, Indian Standards Institution
Prime Minister Nehru



Bombay

Sir C. D. Deshmukh, Governor
Reserve Bank of India

Sir M. Visvesvarayya, President
All-India Manufacturers Association

Prof. K. Venkataraman, Director
Dept. of Chemical Technology
The University of Bombay

Mr. J. Joshi, textile association.

Calcutta

Prof. P. C. Mahalanobis, Hon. Sec'y
Indian Statistical Institute

S. N. Bose - physicist
Indian Statistical Institute

Mr. Driver, Director of Tata and
Past President of Engineering Association

Dr. Mukherjee, Secretary of Science Congress

Mr. C. E. Tattersall, Imperial Chemical Ind.

Mr. John Murray, Director of Research
Jute Research Association

Mr. B. K. Rohatgi, President
Engineering Association of India

People

Education

Religion

Food

Natural Res.
Communication

Government
Industry
Technical and
Scientific Groups
Academic Insts.

Other 395,000,000
to be fed
housed
clothed
educated
transported

↖
Five million people
in
Government
Industry management
Tech. & Sci. groups
Academic insts.

