22026 RUCHANAN D.

# 17. 6 44 22000

SERVANTS OF INDIA SOCIETY'S LIBRARY,

# BUREAU OF INTERNATIONAL RESEARCH, HARVARD UNIVERSITY AND RADCLIFFE COLLE

Dhananjayarao Gadgil Library

# THE DEVELOPMENT OF CAPITALISTIC ENTERPRISE IN INDIA



THE MACMILLAN COMPANY
NEW YORK • BOSTON • CHICAGO • DALLAS
ATLANTA • SAN FRANCISCO

MACMILLAN & CO., Limited London · Bombay · Calcutta melbourne

THE MACMILLAN COMPANY
OF CANADA, LIMITED
TORONTO

# THE DEVELOPMENT OF CAPITALISTIC ENTERPRISE IN INDIA

### $\mathbf{B}\mathbf{y}$

DANIEL HOUSTON BUCHANAN, Ph.D., D.Sc. (Econ.)

PROFESSOR OF ECONOMICS IN FISK UNIVERSITY

(Sometime Professor of Economics
in Keiogijuku University, Tokyo)

NEW YORK
THE MACMILLAN COMPANY

1934

All rights reserved, including the right of reproduction in whole or in part in any form.

# COPYRIGHT, 1934,

# By THE BUREAU OF INTERNATIONAL RESEARCH, HARVARD UNIVERSITY AND RADCLIFFE COLLEGE.

The Bureau of International Research has aided the author in carrying on research for this book and in publishing the results. The Bureau assumes no responsibility for the statements or views expressed.

Set up and printed.
Published December, 1934.

×9.2 64 22**026** 

PRINTED IN THE UNITED STATES OF AMERICA NORWOOD PRESS LINOTYPE, INC. NORWOOD, MASS., U.S.A.

#### PREFACE

RESIDENCE in any one of the principal oriental countries is bound to stimulate a western mind to consider the differences between his own and eastern civilizations, and the reasons for these differences. During a dozen years as an economist in Japan, India and China, a number of conclusions which I first formed tentatively have gradually become convictions.

One of these is that if economic forces play the important part in western countries which most thoughtful people attribute to them, they must be even more important in the Orient, because of the greater pressure of population upon the natural resources in those countries.

A second is that many of the striking differences between occidental and oriental cultures are adaptations of the same human clay to differing economic conditions. Since the opening and settlement of the New World, the West has been pressed in a new mould, leaving the East of to-day in a medieval cast.

A third is that detailed studies of the evolutionary movements now in process in several eastern countries would throw very useful light upon the origins and nature of the competitive system which has characterized the modern economic history of the West.

The corollary to these conclusions is that the much-needed understanding of contemporary problems in Asia requires careful study and appreciation of the economic conditions now underlying change in eastern countries, and of the effects of these changes on the traditional habits, customs and attitudes of their people. Such an investigation should be matched comparatively with the studies which have been made of the economic history during recent centuries of western Europe and America.

For many years, Japan and China have held the center of the oriental stage. Japan, a small nation, was rapidly becoming a Great Power, while China, a very large nation, was threatening to disintegrate. India, though rivalling China in size and populousness.

was the forgotten nation of the East, because her affairs were in the hands of the United Kingdom. With the War, India came into the limelight. Within the country, there were feuds between the Hindus and Mohammedans, between laborers and employers and between Indians and their European government. All these were closely related to the new economic forces stirring in the country. Yet until the investigations of the Indian Industrial Commission in 1916-8. no considerable study of Indian economic conditions had been made since the Factory Labor Commission's work in 1908. In 1926, the need for fuller understanding of India's economic changes, especially those having to do with the growth of capitalistic enterprise, led the government of India to institute a remarkable series of investigations into several aspects of Indian life. The Royal Commission on Indian Currency and Finance published a report and voluminous evidence in 1927; this was followed by a two-year investigation and report by the Royal Commission on Indian Agriculture, and a similar survey by the Indian Statutory Commission. In the meantime, the Indian Tariff Board had investigated and reported on several of the important industries, including cotton and steel manufacturing. Most recently the elaborate inquiry and the voluminous report by the Royal Commission on Indian Labour has added to the wealth of material for students of Indian affairs. The present study was undertaken in 1926 when only one of these Commissions had yet gotten under way. I regret that for the purpose of this study, only a few of the most general results of the 1931 decennial census of India are as vet available.

My work was generously financed by the Bureau of International Relations of Harvard University and Radcliffe College. To the members of this Bureau I am deeply indebted for the opportunity of over one and a quarter years for travel and study in India and for the time thereafter which has enabled me to prepare this study. Obviously the work of an individual, however assiduous, cannot even remotely stand comparison either in resources or results, with that of a Royal Commission or a Tariff Board. I have, it is perhaps needless to say, drawn abundantly and gratefully from the records of these governmental bodies. But this official material was not published until after I had returned from India, and subsequently in working through the evidence gathered by the Commissions it has been encouraging to discover that many of my own inde-

pendent, contemporaneously formulated conclusions were confirmed by theirs.

As an outsider, with neither Indian nor British ties, I have attempted to maintain a detached mind; though I am aware that this is an impossible attitude. I have also allowed myself occasionally to cast a ranging glance along the margins and background of my special theme, in order to see it both in the perspective of general economic history and in the comparative setting of analogous recent movements in China and especially in Japan.

I have appended no bibliography, partly because my study has been based on observation as well as on reading, but also because Miss Vera Anstey's admirable book, *The Economic Development of India*, gives an excellent bibliography of the subject.

The study was undertaken through the interest and under the direction of Professor Edwin F. Gay of Harvard University, who has given constant encouragement, correction and criticism. While I am wholly responsible for the demerits of the work, these would have been far greater but for his friendly vigilance.

For assistance and courtesy in making my enquiries, I am deeply in debt to a large number of other persons, officials of the India Office in London, of the central and various provincial and local governments in India, and to a host of men and women, business men, labor leaders, laborers, missionaries, college professors and others, both Indian and Europeans, so numerous as to make the mere mention of their names impossible. For assistance in preparing the manuscript for the press, I am indebted to Miss Martha Anderson of the staff of the National Bureau of Economic Research, and to my wife, who has given much time to the reading of proof and to the making of the index.

D. H. B.

# **CONTENTS**

	<b>D</b>	PAGE
	Preface	V
HAPTER I.	THE COUNTRY AND ITS PEOPLE	I
II.	INDIGENOUS ECONOMY AND CULTURE	13
√m.	THE EUROPEAN IN INDIAN ECONOMY: PLANTATION INDUSTRIES: INDIGO	27
$\sqrt{\text{IV}}$ .	PLANTATION INDUSTRIES (continued): Tea: Coffee: Rubber	54
v.	COTTAGE AND UNORGANIZED INDUSTRY	75
VI.	TRANSITIONAL STAGES IN INDUSTRIAL ORGANIZATION	98
VII.	THE RECORD OF INDUSTRIALIZATION	127
VIII.	Business Leadership: Capital, Banking, Organization	142
IX.	Transportation and Markets	176
√ <b>x</b> .	COTTON AND COTTON MANUFACTURING	194
$\vee_{XI}$ .	JUTE AND JUTE MANUFACTURE	231
XII.	COAL AND COAL MINING	255
XIII.	IRON AND STEEL	274
XIV.	LABOR: SOURCES AND CONDITIONS	294
XV.	Wages: Additions and Subtractions: Debt	317
XVI.	LABOR EFFICIENCY	36 I
XVII.	THE WORKER'S STANDARD OF LIVING	387
XVIII.	THE LABOR MOVEMENT	416
XIX.	THE BRITISH IN INDIA	450
	Index	483

Absenteeism, in factories, 382-3 Acworth Committee on freight service, 187 Advertising, in tea industry, 174 Agarias, iron smelting caste, 274 Agency houses, European, 167 Agricultural customs, landlord-tenant, 47 Agricultural exports, 192 Agricultural implements, 14 Agricultural produce, export of, 190; European market for, 192 Agricultural technique, 13, 14
Agriculture, 3; continued dominance of,
130; cooperative credit for, 163; expansion of, 131; predominance of, 451; prevalence of in old India, 13 Ahmedabad Textile Labor Union, 436; welfare work of, 414 Alexander and Company, 160 Aligarh, metal manufacture, 114-15 Amalgamated Society of Railway Servants, 421-2 American Civil War, Effect on Indian Trade, 161 American tea market, 174 Anasuya, Sarabhai, labor leader, 435 Andrews, C. F., labor leader, 437-8 Angus jute mill, medical work of, 411 Animal husbandry, cattle keeping, 18, 19 Animal sacrifice, 17 Animals, in indigenous Indian economy, 15; in workers' houses, 396-7
Annenticeship. customary for mechanics, 366 Arabs, in early Indian trade, 27 Arms, early duties on, 163 Army control, Indian demand for, 470-1 Assam Company, tea garden, 55; profits of, 68-9 Assam Railway Company, 258

Bajra, 407
Bakhale, R. R., labor leader, 437
Bani, (putting out) system, 112-3
Bank, capital, 161-2; central, contest
over, 477; charters, early issue of,
161; failures, 162; notes, early issue
of, 160-7
Bank of Bengal, 161
Bank of Hindostan, chartering of, 160
Banking, 157-63, 477; British indifference
to, 477; divisions of, 157; Enquiry
Committee, Indian central, 158; modern
industrial, 162; official plan for, 477

Banks, central, 158; cooperative, funds of, 163; European, 158; Foreign Exchange, 158, 162; government, 162; Indian joint stock, 157–8; indigenous, 158-9; note issuing, 161; number established, 162; semi-official, 161; small effect upon industry, 162 Barber trade, organization of, 101 Bauri caste, place in social scale, 272 Be-ilaka, organization for indigo production, 46
Bell-metal manufacturing, 83 Bengal, immigrant workers to, 295 Bengal Bank, 161 Bengal Chamber of Commerce, 175; and Indian Industry, 467
Bengal Coal Field, 256
Bengal Iron and Steel Co., Ltd., 281
Bengal Iron Company, 281-2; pig iron production, 284
Bengali, Sorabji, S., early social reformer, 420 Bentick, Lord and introduction of steam transport, 178 Berlin Conference on Labor, report on Indian coal mining conditions, 306-7 Bespoke work, 103-5 Bhirbhum Iron Works, 280 Birth rate, compared to European, 5, 6 Births, first, age of mothers, 21n. Blacksmiths, village, 83 Blood-sacrifice, among lower 408-9; in Indian customs, 80 Boards of health, in mining areas, 389 Bokaro coal field, 258 Bombay Chamber of Commerce, 175 Bombay, climate and cotton manufacture, 202 Bombay Factory Labor Commission, evidence of long working hours, 304 Bombay Labour Office, report on causes of debt, 341 Bonus, on cotton mill wages, 331 Boorka, the, 403 Brahmaputra River, 258 Brass manufacture, 83-84, 121 Bribery, in coal mines, 338; in jute mills, 338-9 Brides, selection of, 21-2 British business in India, attitude on currency policy, 474
British capital for railways, 792 British, distrust of by Indians, 461

investment by Government officials, British East India Company, develop-152; investment by handicraftsmen, 109; investment by ruling princes, 152; investment by European merment of, 28 British exporters, and Indian tariff policy, 163 chants, 153; in tea planting, 67; in various industries, 154; joint stock companies, 269; lack of, 146; meagre, British government, achievements of, 481-2 British India, 6 British rule, and the doctrine of Free 148; outside for usufacture, 101; pro-Trade, 459; and trade, 452-3; barrier between European officials and vision of, 148-53; railway amount of, 184; railway source of, 152; source Indian people, 455-7; characteristics of, 481; conflict between the economic of for cotton manufacturing, 207-8 Capitalist, demand for by the handiinterests of England and India, 458-60; criticism of by young Indians, craftsmen, 108 Carpentering, Indian vs. Chinese ef-470-1; development of, 452-5; effect ficiency, 361 of on the untouchables, 456; govern-Carpenters, village, 82 ment stores, 471; reasons for, 451; results of, Chap. XIX; strength of, Carpet factories, conditions in, 91; contract system in, 91; child labor in, 481; the Anglo-Saxon's attitude toward color, 457; the superiority Carpet manufacture, 91; emergence of complex, 457 factory system, 118 Brocade, 90 Caste, and division of occupations, 14, Brokers, in cotton goods marketing, 100; duties of, 23-4; effect on business growth, 146-7; lower, literacy among, 405; methods, reasonableness 217 Buchanan, Dr. Francis, on Indigo growof, 25-6; money lending and trading, 150; origin of, 23-4; position of iron smelters, 275; prejudice ing, 41 Budgets, family, for clothing, of iron smelters, 275; prejudice against "dirty" work, 365; probable bases of, 24; re-admission to, 24; rigidity of, 24; transformations of, 24; family, for food, 401-2; of factory workers, 359 Bullion imports, 192 Burn and Company, agency house, 280 Business leaders, 142 upper, attitude towards industry, Business leadership, American, 143; Baniya caste, 146; Brahmans, 146-7; 458 Cattle, place in village economy, 14 Bailish, 142; European in banking, 160; Greek, 144; immigrants, 143; Indian, 145; Jewish, 145; little among former craftsmen, 145-6; Merchant-capitalist, 146; Moham-Cawnpore Woolen Mills, housing by, 39I Central workshop, 113-8; saddlery manufacture, 115 Ceramic industry, 84-5 Cereals in Indian diet, 401 medan, 147-8; Parsee, 143 Business management, development of, Chamars, colonies of, 80; leather workers, 24, 80, 104 PII Business methods, of East India Com-Chamberlain, Joseph, and Empire pany, 29–30 Business organization, 165–75; cotton Tariff, 164 Chambers of Commerce, European, 174 ginning, 122; evolution of, 125-6; Chance sale, manufacture for, 105-6 Chase, Stuart, 94
Chatterton, Sir Alfred, founder of the Indian aluminum industry, 463
Cheap, Mr., the commercial resident, evolution of indigo production, 41-53; in jute baling, 122; in rice hulling, 122; transitional forms, 125; types of in indigo production, 42-3; variety of, 124 Child-birth, unfavorable surroundings for among factory workers, 396n. Busses, 181 Butchering, caste prejudice against, 80 Child labor, on plantations, 51; in carpet manufacture, 91; in coal mines, 272-3, 299, 303, 307; in jute mills, 308; in mines and factories, decline Cable lines to India, 179 Cairnes, J. E., on laissez faire, 467 Canals, 188 Capital, advances in indigo planting, 43-4; British, 151-2; Calcutta source, 267; European for tea planting, 59; in, 299; in rope making, 91; in textile factories, 444-5; in tobacco manufacture, 88 for indigo planting, 37; for industry, Child marriage, 19 161; for managing agencies, 167; Indian borrowed, 192
Capital investment, by companies, 153; China trade, effect of rupee stabilization on, 474 Chinaware, prejudice against, 85

> in, 302; equipment in, 302 Cotton goods, duties on, 164; eastern

Indian Commerce, early organization of in Christian movement, versus Japanese, 413-74 Christianity, an aid to the factory sys-tem, 120; to go with trade, 465; Christians, housing of workers, 395 Calcutta, 142
Commercial relations, publishe permanency of, 1, 2 Christians, housing of workers, 395 Cities, characteristics of in old India, Commercial residents, place and business of, 32-34 Commercial Revolution, precedes In-Classical economists, and "advances to dustrial, 130 laborers," Commission-taking II2 from workmen. Climate, 4 Communication, 3-4, 177; and labor, 189; and the farmer, 189; between Europe and India, 178; telegraphic, Cloth consumption, 403, 404 Clothing, 402-4; children's, 403; family expenditures on, 404; men's, 403; ready made, 89; women's, 403 Coal, aid sought from government, 265; 179; the effects of improved, 189-193; Internal, 179-80 annual production of, 257; areas, housing conditions in, 389; coking, 258; consumption of in various uses, Competition, from advanced countries, effect on industrial evolution, 125-6 Consumption goods, changed to suit factory methods, 126 264; cutting machinery, use of, 363-4; demand for, 256; estimate of re-sources, 257; fields, most important, Contract system, in carpet manufacture, 91; in coal mines, 121-2, 270; in cot-257-58; foreign competition, 264; ton manufacture, 306; in jute baling, 234–235; in leather works, 115; in Scottish coal mines, 271; on tea future of, 273; per capita consumption, international comparisons, 263; pilferage, 266; poor quality for iron industry, 284; production vs. imports, 265; qualities of, 258-9; selling plantations, 65 Coöperation, 172; for handicraftsmen, 113 prices, 263; shipping, 265 Coöperative banks, government en-Coal mine organization, 270 couragement of, 163 Coal miners, Bauri group, 296; drinking Cooperative credit, for agriculture, among, 410; irregularity of hours, 272; output per capita, 363; Santal, 162-3; for hand-weavers, 79; small influence on industry, 162-3 Coöperative Societies Act, adoption of, 296 Coal mines, financing of, 160; irregu-163 lar hours in, 306; labor regulation in, 303; management of, 270 Corn parchers, 87 Corporations, Indian, 165 Coal mining, associations in, 174; beginnings of, 255; comparative use of Cost of Living, Index Numbers of in Bombay, 1914-1933, 353 Cottage Industry, Ch. V. machinery, 363; conditions, 259, 263, 303, 363; European companies, 267; Cotton, exchange, 173, 198; excise duty, employees, 364; family system in, 272, 303; lack of standardization in, 323; repeal of, 173; export of, 190; for Japanese industry, 196; influence of profits of, 266-7; wasteful methods in 259; women's labor in, 364 climate on spinning, 202 Cotton and cotton manufacturing, 194-Coal producers, organization of Eu-230 Cotton Association, East India, 174 Cotton cloth, hand loom weaving of, 199; imports, 192; qualities produced, ropean concerns, 268; organization of Indian concerns, 268 Coal production, in different fields, 257 215; sources of, 222; the art of making, 194; trade in, 194 Coal resources, estimate of, 283; investigation of, 256 Coffee, exportation of, 71; factories, 71; Cotton committee and cotton staple, production of, 71 195 Coffee plantations, average size of, 70-1; distribution of, 70; introduction of, 69; labor on, 70; Mysore state, 69; ownership of, 72; profits in, 72; success of 60; temperature labor. Cotton contracts, 199 Cotton crop yield, American, 195; Egyptian, 195; Indian, 195 Cotton, dirt in, 197; English market for, 195; imports, use of, 196; market, 198; cess of, 69; temporary labor, 72 quality of, 195; watering of, 197 Cotton ginning, 198; first independent Collectors, position lower than Commercial Residents, 33 Colleges, curricula of, 478; quality of, power gin, 302; hazards in, 303; immature ventures in, 302 478 Collieries, ownership, 268 Color question, effect on British rule, Cotton gins, early laboring conditions

market for, 219-20; imports, changing character of, 222; imports, competition with native handicraft, 78; imports, sources of, 224; Indian exports of, 222; market, Calcutta, 218; marketing by brokers, 217; mill production of, 214; sources of, 223; trade, 224 Cotton imports, facilities for, 197 Cotton industry, centers of, 201; development of, 199-200 Cotton manufacture, amount and source of capital, 206; efficiencies of laborers in leading countries, 378; equipment for, 203; Indian proficiency in, 372; location of, 202; power for, 202 Cotton manufacturers' associations, 173 Cotton manufactures, protection of, 164, 470; sources of, 132-5 Cotton manufacturing, Ahmedabad, fuel problem, 264; Bombay, fuel problem, 264; equipment, growth of, 201; Indian rank in, 199 Cotton market, development of, 199; Asiatic, 198; the home, 202 Cotton mill, a typical Indian, 203 Cotton mill employment, 199 Cotton mill labor, efficiency of in India vs. in Japan and China, 376-7 Cotton mill management, Japanese vs. Indian, 228 Cotton mill products, coarse yarns, 221; cloth, 221; consumption of, 222; export and import of, 222; foreign competition in, 222; tendency towards higher grades, 215 Cotton mill profits, 208
Cotton mills, and coal, 202; antiquated styles, 203; bleaching and dyeing in, 216; Bombay, 229; building materials for, 203; capitalization, effect of warboom on, 207-8; capitalization of, international comparisons, 207; character of products of, 213; conditions of labor in, 227; cost of construction, 206; early construction of, 300; early working hours, 310; equipment for, 203; growth of, 137, 200, 201; illegal employment of children, 311; introduction to Bombay, 129; labor in, 202, 212; lack of specialization in, 216; machinery for, 204; management of, 210; marketing by, 217-19; printing in, 216; quality of products, 214; transportation to, 206; up-country vs. Bombay, 229 Cotton "pit," 198 Cotton quotations, 198 Cotton spinning, growth of in Asia, 220; raw cotton per spindle, 373 Cotton textiles, duties on, 163 Cotton Transport Act, 197 Cotton yarn, counts produced, 215; exporting of, 194

Crops, trend toward commercial, 130 Countervailing duty, on Indian cotton manufactures removed, 466 Court of Enquiry, under Trades Dispute Act, 449 Cow-dung, Indian uses of, 396-7 Craftsmen, 16, 163 Creches, in factories, 412 Crusades, influence on economic history, Cultivated land, per capita, 131 Culture of Indian workers, 408 Currency, 153-7, 473-6 Currency depreciation, the Indian tariff, 164 Japanese, and Currency, paper, 155 Currency, palet, 155 Currency policy, and yarn trade, 221 Curzon, Lord, 303; and economic re-form, 463; and mining development, 285; and the preferential tariff, 164, 467; on Lancashire influence over Indian tariffs, 465; report of investigation on mines, 303 Custom, influence on economic progress, Dadun, advance, in indigo production. Dalhousie, Lord, 182 Dasturi, (commission) description of. 337-8 Datta, K. L., adequacy of his wage study, 350-1; estimate of real wage variations, 350-1; on mining wages, 322 Debt, a means of insurance, 343n; an cold custom, 341; and religion, 343; causes of, 341-3; extent of among factory workers, 345-6; formal relationships, 343; importance of, 456; in a rural village, 345; in handicraft, 343; inheritance of, 45, 343; in indigo planting, 43; interest of emplayer in 242; interest rates paid. ployer in, 343; interest rates paid, 346-7; of factory employees, 340-7; of handicraftsmen, 90; reports on, 345-7; services of, 343 Department of Commerce and Industry, establishment of, 463
Departments of Industry, provincial, activities of, 463 Department stores, beginnings of, 106 Dhuti, the, 403 Diet, 400; of low class peasantry, 400 Differences (mental and physical), 11 Discipline, factory, by fining, 335 Distrust, mutual between British and Indian, 460 Doren, Alfred, 343 "Double khada," rule for workers' fines, 335, 383 Dravidian race, 7 Dress industry, 89 Drewett, description of excessive hours in cotton gins, 305

Drunkenness, 410-11 Dundee, industrial rivalry with Calcutta, 467 Dutch East India Company, 28 Duty on tea exported, 174 Dyeing methods, 38-9

East India Company and British rule in India, 453-4; and industrialization, 142; and steam navigation, 178; and the Indian cotton market, 195; evolution of business, 51; Chinese tea trade,

East India Iron Company, 279 East India Railway, 184
Economic changes, European, influence
on Indian trade, 28

Economic revolution, beginnings of, 178

Economic Unity, 6

Education, 404-8; adult, 407; a "transferred" subject, 480-1; official attitude towards, 479; financial difficulties of, 480; Indian indifference to, 479; mechanical, by Christian missions, 406; official advocacy of, 479-80; official skepticism about, 479; opportunity for in foreign factories, 407; per capita expenditure for, 478; quality of, 477-8; reasons for low quality of, technical, shortage of, 479; vs. Philippine and Japanese, 405 Educational opportunities for half-time

workers, 405; work of Ahmedabad Textile Labor Union, 414 Efficiency, handicraft vs. factory, 92-7;

improved in coal mining, 362
Efficiency, of jute labor, 367-72; of labor, Chap. XVI; percentage of on

jute looms, 370-1 Electricity, cost of in cotton mills, 202. See hyproelectricity

Employees, ceramic industry, 84; jute mill, 369

Employment (booms coolies), 51

Employers, attitude on labor condition, 300; attitude towards labor organization, 430-31 Empress Mills, financial success

200-10

Engineering, comparative efficiency of employees, 366; comparative progress, 366; efficiency in, 366 English Statute of Apprentices, hours

of labor under, 304

European labor and factory goods, 192 European markets for Indian agricultural produce, 192

Exports, of Indian manufactures, 193; duties on under the Company régime, 163; of manufactures, percentage of total, 132; principal for selected years, 134; weighing and measuring of, Extortion in indigo planting, 45-50 Extra-territoriality, in early Indian foreign trade, 27

Factories, European influence upon, 314; hours of labor in, 304; seasonal, 141;

trading posts, 29-30; wages in, 317
Factory Act, applied to tea factories,
66; ignorance of by factory managers, 301; influence on child labor, 299; influence on girl workers, 299; of 1881, 313; of 1911, 313; of 1922, 313; violation of, 308

Factory buildings, inadequacy of, 302 Factory employees, Average number under the Factory Act, 1895-1931, 297

Factory goods, 192
Factory hours in 1905, 311

Factory industry, facilities for, 450; relation to plantation employment, 321; slow development of, 451

Factory inspection, in early mills, 300,

302-3; weakness of, 444
Factory labor, amount applied to machinery in India vs. in America, 378 Factory Labor Commission, investiga-tion of child labor, 308

Factory Labor, clothing of, 402; com-parison with Japanese, 226-7; diet of, 400; education of, 404; food con-sumption, 401; holidays, 313; house rent of, 399; housing conditions of in Bombay, 393; housing, slow improvement of, 399; in jute mills, 308-9; lack of resourcefulness, 301; moral standards of, 409-10; overcrowding of, 394; religious customs of, 408; sex distribution of, 298; shoe, efficiency of, 361; "untouchable" group, 207

Factory location, reasons for, 202 Factory management, Indian, Parsee, 206

Factory system, as a stage in industrial evolution, 118-25; deterrents to development of, 119; development in Europe, 128; emergence of, 117-8; emergence of in hand-weaving, 120; emergence of in shoe-manufacture, 119-20; evolutionary types, 114; extension of, 141; importation of, 119-20; in Orient, 200; influence of, 2; irregular emergence of, 123-4; post-ponement of, 121-2; slow growth of,

Factory wages, inadequacy of, 317; vs. agricultural, 318

Factory workers, 359; causes of debt, 341-42; chicanery practiced on, 347; classes of, 297; debt of, 340-41; cost of living, 342, 348-9; extent of indebtedness, 345-46; separation from families, 294; types employed, 294

Family, 22

Goculdas Morarji, 202

Gokhale, on educational policy, 480

Family status, and economic position. Gold Exchange Standard, establishment of, 155; success of, 474 Family system, and social service, 415-16; economic basis of, 21; influence Gold thread, 90; hand vs. factory production, 94 on progress, 23 Government encouragement, iron and steel, 281, 285 Government encouragement to industry, Famine Commission of 1880, advocates diversity of occupation, 462; recommendations of, 183 Japan vs. India, 367 Famines, reduction of by railways, 183 Government, influence on factory hours Farm, area, variation with conditions, and working conditions, 316 Government management of Railways, Farm implements, 13 Fevers, 8, 9
Filatures, silk, operated by East India Government Railway policy, 185 Government revenue, war-time need for, Company, 32
"Finance and order" system, 110-11 Government subsidy for cooperative Financial control, Indian desire for, 470banks, 163 Government stores, mainly British prod-Fines, assessed on workers, extent of, ucts, 473; purchase of, 471-3; quantity 335; employers abuse of, 336; in inof, 1917-1930, 472 digo planting, 45; in textile mills, 123; levied on telephone workmen, Grain, hand grinding of, 100 Grand Trunk Road, 177, 188 335-6; offences causing them, 335 Gras, N. S. B., on industrial evolution, Fire, danger from in early gins, 302-3 Fiscal Commission, recommends pro-Great Indian Peninsula Railway, 185 tection, 164-1; sponsors of "Indianiza-Griffin, Sir Lepel, 468 tion," 288 Fish, as an article of food, 400 Hand labor, economy of, 290 Handicraft "factory," weaving, 114; Food, 400-2; consumption, variation with incomes, 402; grains, prices of, metal trades, 114-115 7867-1890, 349; Industries, 87; percentage of expenditure for, International Comparisons, 402 Handicraft, goods, difficulty of standardization, 111; production, retail, 103-6; shops, laboring conditions in, 95; system and debts, 344; transition to merchandising, 106; wholesale, 107-Flour Industry, 87 Foreign Trade, 191; activity of during American Civil War, 161; financing of, 162; in old India, 27; movement of, 131-2; of British India, 190 13; workers, 75
Handicraftsmen, dependent, 107; Independent, 107; tendency toward de-Fraud, lack of in village economy, 15 pendence as market widens, 109-10 Free trade, in India, British demand for, 465; influence on industrialization, 138; long accepted by both British Hand-loom products, variety of, 76 Hand-loom weaving, costs of, 92; importance of, 222 Hand-looms, number of, 75; percentage of cloth production by, 75-6
Hand-weavers, and money lenders, 79; competition from power factories, 78; ish and Indians, 468 Freer-Smith Committee on textile labor, Freight rates, 186-87; and foreign imdependence upon merchant-capitalist, wependence upon merchant-capitalist, 77; housing of, 78; Salvation Army, work for, 78; work-shops, 78
Hand-weaving, 75; improvement of, 78; operation costs, 79; popularity of, 76; prospects of, 80
Health most determine discussions ports, 186; and Indian industry, 186; early, on cotton, 189 Fuel, wood for cotton manufacture, Furniture, in workers' houses, 395 Health, most destructive diseases, 8; provision for, 10 Heath, Josiah Marshall, experiments in Gaud, raw indigo, purchase of, 43 Gandhi, M. K., and hand spinning, 77; as labor leader, 435-6 Galvanized Sheets, as housing material, iron and steel, 278-79 Heatly, S. G., 255 387; demand for, 290 Hides, quality of, 93 Highways, 188
"Hill men," on indigo plantations, 51
Hoarding, justification of, 149 Geological Survey, report of ore deposits, 283 Geography, 2-4 "Gins," 261 Holidays, allowed in cotton mills, 315;

European vs. Indian, in factories, 314-15; Factory Act stipulations, 316;

factory disregard for, 313-314; increasing observance of, 316 Indebtedness, rural, 163; urban, 345-6 Homeownership, among semi-rural factory workers, 388 Home production, 101 Hours of labor, 304ff; effect of shorten-ing, 310; employers' proposals for, 310-1x; further reduction under Factory Act of 1933, 446-47; and electric light, 307; early starting, 312; in cotton gins, 304-5; in textile factories, 307; under various Factory Acts, 313 Housekeeping, peculiar aspects of, 397 Housing, by government in Bombay, 399; by the Tata Iron and Steel Company, 392; company, 390-91; company, as an investment, 392; conditions in mining areas, 389; construction of, 82; effect of on infant mortality, 398-99; effects of unsani-tary conditions, 398; factory workers, city, 388; factory workers, rural, 387; factory workers, semi-rural, 388; in Bengal, 386; in Bombay, 393; in jute mills, 391; in large cities, 388; in South mills, 391; in large cities, 385; in South India, 387; in the Pacific Islands, 387; in towns, 390; labor, variety of, 387; lack of improvement in, 397; materials, cheapness of, 387-88; of coal miners, 390; of untouchables, 388; provided by employers, 390-91; reasons for poor conditions of, 399-400 Human carriers, 180 Hydroelectric system for Bombay, 202 Hydroelectricity, in Mysore, 203; Tata project, 202-3 Ilaka, organization for indigo production, Imperial bank, 162 Imperialism, British, early development

Import duties, law until 1916, 465; on cotton manufactures, 470 Imports, chief, 132; competitive, 224; early duties on, 163; principal, for series of years, 133-5; of iron and steel products, 295
Import tariffs, 464; advocated by a few British officials, 468; British, on Indian imports, 464-5; "countervailing duty," 466; development of, 464; "discrimination" protection" applied "discriminating protection" 470; Indian demands for self-determination on, 469; influence of war on British attitude to, 469; opposi-tion to by Indians, 466 In-breeding, prevalence of in certain forms, 22 Incomes, of farm families, 356; per

capita, 356; in kind, 14

Index numbers for jute wages to 1912, Indian Central Cotton Committee and staple cotton, 195 Indian civil servants, their industrial training, 458 Indian coal fields, distribution of employees, 323 Indian cotton workers, comparison with Chinese and Japanese, 376-77
Indian, distrust of by British, 460
Indian Factory Labor Commission, 301
Indian Fiscal Commission, 164; and protection, 469-70 Indian government, compared to the Japanese on industrialization, 471, 473 Indian Industrial Commission, appoint-ment of, 463; on watering cotton, 197; recommends government intervention in industry, 164 Indian Iron and Steel Company, 282; plant equipment, 286 Indian Jute Mills Association, 172; estimate of jute labor efficiency, 367 Indian labor union, 424 Indian labor, factors in inefficiency, 386 Indian market for English cloth, 194 Indian Merchant Chambers, 174, 175 Indian mills, equipment of, 368 Indian Mining Association, 174; members of, 268; production by, 268 Indian Mining Federation, 174, 266, 269 Indian Tea Association, 174 Indianization, in iron and steel manufacture, 288; recommended by Fiscal Commission, 288 Indian prices, accord with world trends, Indian religion, its relation to economic conditions, 17 Indian states, relation to British India, Indigo, acreage, 39; acreage planted, ndigo, acreage, 39; acreage pianted, in 1890, 51; adulteration of, 36; Commission, 45; cost of raw materials, 39; decline in production, 53; early development of, 35; early European opposition to, 35; early trade in, 35-6; effect of World War on, 52; export statistics, 39; factories, 52; independent cultivation of, 51; influence of French Revolution on, 36; manufacturing processes, 38-9; markets, 40; pioneers in, 37; value of product, 39 Indigo planters, encouragement of, 37 Indigo planting, capital for, 37; centers of, 37; difficulties of, 41; organization of 41; reasons for oppressive systems in, 53; scale of operations, 52

Indigo plantation managers, 40

Indigo plantations, development of, 36; distribution of employees, 51; financ-

towards, ing of, 160; numbers employed on, 285; experiments with. 280-1; experiments with in Madras, Indigo production, decline of, 52-3; in 278 80 various areas, 38 Iron mining, cost of, 291; early experiments with, 278-9; favorable conditions of, 283; labor in, 290 Individualism, opposed by family and caste, 23 Indo-Aryans, 7 Iron ore fields, extent of, 285 Industrial accidents, in cotton gins, 302-Iron ore, impurities in, 283; quality and 3; in early mills, 300 quantity, 282; quality of, 275, 284; Industrial development, and missions, transportation costs, 284 Iron smelting, ancient, daily output, Industrial employees, under the Factory 276; ancient, distribution of product, Act, 1892–1931, 139 276-7; ancient versus modern, 277; Industrial expansion, post-war, 140 early types of furnaces, 275; furnaces, ancient, 274-5; types of bellows, 275; Industrial evolution, 98-9; slowness of, use of charcoal fuel, 281 141; variety of, 125 Industrial labor, disliked by higher Irrigation, 4 classes, 365; sources of, 294 Jack, J. C., on living standards, 358-9 Japanese, business management, 172; cotton manufacturing, bleaching fac-tories, 228; cotton manufacturing, Industrial organization, complexity of, 98; influence of machinery on, 271; transitional stages in, Ch. VI.; types according to Gras, 99 Industrial population, 75; decrease of, expansion of, 228; cotton milk, labor 130; two groups of, 130-1 conditions in, 227 Industrial Revolution, environmental ef-Japanese imports, cotton goods, quality fect on, 125 of, 224; duties on, 164 Industry, financing of, 160; government Japanese, Indian competition, 225-7 interest in, 463; government studies of, 462; growth of, Ch. VII; Indian disdain for, 458; lock-making, 325; Jessop and Company, 280 Jewelry, use of, 149-50 Jharia coal field, 257, 260 unorganized, 75 Jobbers, and factory schools, 405; as Infant mortality, and housing, 398 money lenders, 344; in cotton mills, Influenza, 1918 epidemic, 9 122; taking of commissions from work-Interest, as an income in old India, men, 337-9; textile mill, 416 Jones, Inspector, report on holidays, 315 150 Joshi, N. M., labor leader, 437 Interest rate, effect on machinery em-ployed per laborer, 386; for indigo Jowar, 401 Jute Balers Association, 173 capital, 37; paid by factory hands, Jute, baling of, 233; brands of baled, 236; cloth in old India, 241; char-346-7 Interest taking, Mohammedan doctrine of, 18 acteristics in quality of, 236; classification of, 236; consumption of, 239; Intellectual progress, Indian vs. Eucontracts, 237; description of, 231; exropean, 11 "Interlopers," in early European enterperiment with, 242; export of, 239-40; prise in India, 31 factories, location, 231; growing of, International payment, to Great Britain, 232; influence of commercial growth in use of, 241; labor, efficiency of vs. Scottish and German, 367-8; labor problems, 234; market, 198; market 153-5 Investment, growth of, 151 Iron and Steel, imports of, 292-3 places for, 235; monopoly of, 231; price fluctuation in, 237-8; produc-tion of 239; "retting" of, 232; specu-Iron and Steel Industry, 323-4; demand for, 282; experiments in Chandra district, 281; foreign specialists, 287; lation in futures, 238; sorting, 235; plant expansion, 286; profits of, 295; trade, 233; trade, organization of, 233; proximity of raw materials, 283; trend toward permanency, 293; wages, yearly average in the Tata Iron and transportation to milk, 240; treatment of, 232 Jute industry, organization of, 253; Steel Mill, 324 Iron, cheap European, 274; demand war-time activity, 309-10 during World War, 285; government experimentation in, 285; importation Jute manufactures, exports of, 193; growth in demand for, 139 and exportation, 284; Indian supply Jute manufacturing cost, 250 Jute milk, beginnings of, 242; capital and demand, 284 cost of, 251; changing type of labor in, 296; construction of, 244; develop-Iron manufacture, 280-1; by J. N. Tata, 285; changes in governmental policy

ment of, 243-5; direction of, 254; employment in, 246; expansion of, 244; hours reduction in, 309; hours of labor in, 248; improved products of, 244; introduction of, 129; labor relations in, 440; living quarters, 244-5; machine operators, 370; management of, 211-12, 231; organization of, 247; progress of, 301; profits of, 141, 251; restricted production, 140-1; shift system in, 307; stated meetings under the managing agency system, 169; variance in labor types, 296; venereal disease in, 10; wage scale in, 327; wages, 1929 (60 hour week), 328; work in, 247; workers' trade union, demands of, 433

Karanpura coal field, 258
Karma and Conservatism, 18 Khaddar, imitation of, 76; movement for, 76 Khartouli Lease, in indigo planting, 49-50

Labor, agitation, increase of, 422; alabor, agitation, increase on, 424, ac-lowances on tea plantations, 64; amount applied to machinery, 386; causes of irritation, 417; coal min-ing, 271; concerted action by, 420; conditions in early cotton gins, 302-3; contractor, in early factories, 121; costs, direct, in cotton mills, India, Japan, China and the United States, 380-81; costs, in cotton mills, Japanese, British and Indian comparisons, 380; cotton manufacturing, immigrant vs. local, 296; cotton mill, comparative costs of, 379-80; cotton mill, proportions of men, women and children, 212; demands, early, 420; difficulty of organization, 421; immigrant, 213, 294-7; in iron and steel manufacture, 289; no standard amount per machine, outside, in usufacture, 100; skilled, on tea plantations, 67-8; supply, excess of, 339; turnover, 383-4

Labor conditions, compared to early factories in England, 312n.; in factories and mines, 300ff.; lack of rest period, 312

Labor disputes, causes of, 429-30; early, 418; post-war, 427; 1921-33, 428; report on by Bombay Committee, 429; war-time, 426

Labor efficiency, Chap. XVI; effects of disease on, 384-5; improvement of in English cotton mills, 374-5; in Calcutta vs. in Dundee jute mills, 370; in cotton mills, disagreement regarding its improvement, 373; in English vs. Indian cotton mills, 374-5; in Indian vs. American cotton mills, 375-6; in Indian vs. English cotton

mills, 373-4; Indian vs. Japanese and Chinese, 374; in iron and steel industry, 364-5; in match factories, 362; modified by raw materials, equipment and hours, 372-3 Labor inefficiency, and quality of ma-

terials, 385; irregular attendance, 382; lack of training and discipline, 385; loitering, 382; poor physical develop-ment, 384; reasons for, 384 Labor-Intelligence Officer, in Bengal,

Labor legislation, act of 1881, 442; act of 1891, 443; act of 1911, 445; act of 1922, 446; act of 1933, 446; attitude of employers on, 49; effects of, 447; proposals by Washington Labor Conference of 1919, 446; Trades Disputes Act of 1929, 448; weakness of (untrained inspect-ors), 444; Workmen's Compension Act of 1923, 447

Labor organization, 418, 425; Ahmeda-bad union, 436; extent of, 431; factors affecting growth of, 438; government encouragement of, 431; growth since the war, 430; in Bengal, 433; indifference to, 417; in factories, 173; leaders of, 435-7; report on by Registrar of Trade Unions in Bombay,

435; types of, 432 Labor recruiting, regulations for teaplanting, 61

Labor reform, agitation for, 423 Labor relations, quietness of in 1892,

Labor saving equipment, little used, 205; in coal mining, 363-4

Labor union, Mohammedan Association in Calcutta, 423

Labor unions, growth of, 426
Labor unions, slow growth of in jute mills, 421

Lac Factories, 91 Laissez faire, and British rule, 459; questioned in 1829, 461

Lancashire influence, in cotton mill management, 211; on cotton mills, 204-5; on Indian tariff history, 465-6 Land legislation, by Lord Cornwallis,

47 Land-ownership, 189 Land price, influence on factory layout,

Land tenure, in old India, 13 Law, prominence of in educational institutions, 478

Leadership, progressive, 141

Leather, exports of, 81 Leather Industry, and the Mohamme-dans, 80; hand work in, 80; prejudice against, 80

Literacy, 47; among castes, 405 Living costs, per capita, 358

Living standards, among handicraft and factory workers, 96; among peasantry, 358; meagreness of, 358

Loans, by planters in indigo production, 49; consumption, 158-9; production, 158-9

Lock-making, wages in, 325

Lokhandy, N. M., early labor leader, 421-2

Looms Automatic, numbers per weaver, 381n.; old-fashioned types, 205; speed of in jute mills, 370

Luxuries, early trade between India and Europe, 27

Machine manufacture, 141

Machinery, accidents from in early mills, 300; and change in labor policy, 269; care of, 205; economical use of in

care of, 205; economical use of in high wage vs. in low wage countries, 378; on coffee plantations, 71 Madras Board of Revenue and the iron industry, 280 Madras Chamber of Commerce, 175 Madras, labor situation in, 441 Management, Indian vs. European in coal mines, 270; of cotton mills, Managing agency, commission of, 170-1; cost of, 169-70; duties of, 170; European, control of jute mills, 172 Managing Agency Firms, and capital provision, 151-2; business leadership of, 160; in coal mining, 267; remuneration of, 166; various types of business under single control, 167 agency system, Managing 165-71; adopted by Indians, 168; advantages of, 167-8; economies of, 168; failure of, 168-9; in tea growing, 58

Mann, Dr. Harold, on village indebtedness, 345 Manufacturers' Associations, 173 Markets, British, 165; Ceylon, 265; coal, 263; development of, 107; distant, and demand for a capitalist, 109; home, for Indian manufactures, 193; local, 109; Strait Settlements, 265 Marriage, age of, 5; early, 20; early, economic reasons for, 21-2 Martin and Company, managing agents, Marwari Association of Calcutta, 175 Marwaris, traders and money lenders, 344-5 Mass production, lack of in cotton mills, 216 Match factory, early conditions in, 302 Meat, as an article of food, 400 Mechanics, skill of, 366 Medical Costs, 10 Medical service in factories, 411-12

Merchandising, transition to from handicraft, 106 Merchant-capitalist, 77; business 110; important services of, 108; Indian appellations, 113; in handicraft industry, 16; in Indian economy, 44; profits of, 113 Metal-crafts, 82-4 Metal workshops, equipment, 84; labor conditions in, 83; supervision in, 114 Middlemen, lack of in village economy, Migration, effect of industrialization on, 295; of labor, 189 Miners, comparative efficiency of, 363 Mines, and the monsoon season, 260; control of, 269; interference with crops, 272; laboring classes in, 269; lack of protection in, 262; ventilation of, 262 Mining, "bord and pillar" system, 260; cave-ins, 260; child labor in, 273; coal costs, 262; coal cutting-machinery, 262; commission-taking, 269; equipment, 261; extension of electrical equipment, 262; hauling apparatus, 261; labor efficiency of, 362; number of Indian managers, 269; organization of, 269; wages, advance in, 322; women workers in, 272 Mirams, A. E., on Poverty and Housing in Bombay, 395–6 Mission, Basle and hand-loom weaving, 79 Missionary work, and factory development, 128 Moghul Empire, break up of and British ascendency, 29-30 Moghul government, Asiatic, 455 Molesworth, Sir Guilford, 468-9 Money, gold value of, 357 Money-lending and trading caste, 150-1 Money-lenders in factories, 344 Mongoloid race, 7
"Monsoon" rains, and electric power, 202; importance of, 4 Montagu, E. S., on the superiority complex, 457 Montagu-Chelmsford Report on protection, 469 Moral prestige, of British government, 457 Moral Standards, among workers, 409-Morison Commission on Factory Labor, 422 Morley, Lord, opponent of government interference in industry, 463 Motor cars, and busses, 181 Mutiny, of 1857, 129, 183

Mythology, and oil pressing, 86

Nair, Dr., Social reformer, 445 Naoroji, Dadabhai, on living standards,

356

National Legislative Assembly, business representation in, 173 Nij, organization for indigo production, 48, 50 Non-cooperation, practiced by both sides, Novelties, place in Indian-European trade, 30 Occupancy right, sale of to indigo plant-Occupational divisions, 14; rigidity of in old countries, 25 Oil mills, economy of, 86; employees in, 86; modern, 86; modern, prejudice against, 86 Oil Pressing, and mythology, 86 Oil presser, caste, 85; equipment of, 85; standard of living, 87 Oil seeds, 87 Opium war, and industrial development. Oppression, in indigo planting, 38 Oriental trade, early European rivalry for, 27-8 Over-crowding, comparisons between London and Bombay, 394; extreme in large cities, 393; evils of, 394-5; in Bombay, 395-7; in various Indian

cities, 394 Pack animals, 180 Parsee foremen, effect on labor relations, 440; in Indian economic development, 144 Passenger rates, 186 Pathan, money lenders, 344 Perin, C. P., 284 Personal relations, and labor disputes, 416-17 Petit, Sir Dinshaw, 211 Philosophy of resignation, 17 Physical habits, 7-8 Physical surroundings, influence on culture, 11 Physique, influence of climate and food upon, 7-8 Pig, the Indian, 400 Plague, 9; in cotton mills, 422 Plantations, discipline on, 51; labor allowances on, 51. See, coffee, rubber, tea Planter's court, 44 Planting industries, beginnings of, 35 Political reorganization, demand for by British, 454 Politics, influence of factory system on, 128 Population, 4-11; growth of, 6; per square mile, 5; rural, increase of, 131; rural vs. urban, 6; urban, movement of, 131

Potters, displacement of, 85; equipment

Potter's caste, 84

of, 84; payments to, 85; prospects of, 85 Pottery, in Indian customs, 84 "Poundage," means of payment to managing agents, 166, 169 Poverty, of workers, 295-6; philosophy of, 17 Power cost, of electricity, 203; hydroelectricity, 202-3; international comparisons, 202-3 Precious metals, in old India, 149 Prestige, British, affected by tariff policy, 466 Price level, stability of, 157 Prices of food grains in India, 1860-1890, 349 Price statistics, inadequacy of, 319
Prices wholesale, changes in India, England and the United States, 318
Princely courts, demand of, 16
Production costs, hand-loom vs. factory, Producer's goods, in old India, 15
Profits, Bombay vs. up-country cotton
mills, 209; coal mining, 266-7; coffee
planting, 72; cotton mill, 208-10; cotton mill vs. its managing agent, 171; in jute mills, 141, 251; in tea planting, 68-9 Progress, Indian attitude towards, 481; not peculiar to Occidentals, 11 Protection, advocated by the Indian Fiscal Commission, 469-70; for the steel industry, 164; Indian demand for, 459; opposition to, 470; required for early commerce, 29

Provincial legislative council, business representation on, 173 Pulses, 401 Purdah, 19, 20; influence on health, Putting Out System, 107-18; in brass and bell-metal industries, 112; in metal trades, 83; in tailoring, 90; in textiles, 77-9; in tobacco manufacture, 89; materials put out to factories, 125 Pykars, (brokers), 32

Race relations, on the railways, 186, 188
Races, diversity of, 6-7
Railways, 181-8; and internal trade,
192; and raw material, 192; and the
economic revolution, 181-8; capital
for from England, 152; contracts for,
183; costs of, 183; earnings of, 183;
effects of, 183; employment on, 186;
equipment of, 290; freight carried;
190; growth of, 183; guarantee system
in building of, 183; influence on industrialization, 128; introduction in
India, 182; introduction of, 129; investors in, 189; losses of, 184; management, 185; mileage, 184; passengers on,
189; personnel, 186; private building of,

183; purchase by government, 184; Santals, place in social scale, 272 Sari, the, 403 rapid development of, 138; rates, 186-Sastri, Sir Srivinasa, 437 Schools for factory children, 311, 413 8; service and bribery, 187-8; state construction of, 183 Rainfall, uncertainty of, Scissors manufacture, 83 Servants of India Society, and labor Raniganj coal field, 256-7 Raw produce, exports, percentage of toleadership, 437 Sewers, slow introduction of, 389 tal, 132 Real wages, 347-55 Redferne, Mr., 255 Religion, and Life, 16; diversity of, 6; Real wages, Sex distribution, in coal mines, 299; in factory cities, 298 Shift, "simultaneous," 315, 445 its influence on British rule, 356-7; of Shift system, 306; effect on women and factory laborers, 408-9 children, 309; evaluation of, 310; factory inspectors opposition to, 310; Religious purity, and caste, 25 Rentals, of industrial workers, 399; perin coal mining, 307; in Japanese cotton mills, 228; in jute mills, 307-8; the "simultaneous," 313, 445
Shoe factories, Manila vs. Indian, 93; centage of total expenditure of industrial workers, 399 Repair work, importance of, 82 Reserves, monetary, kept in London, operators in, 361 Shoe manufacture, hand vs. machine, Resources, material, 2-3; mineral, 3 Rice hulling, organization of, 122 Shroffs, business of, 159 Rice industry, 87 Silk manufacture by the East India Rivers, navigability of, 3
Roads, Development Committee, 181;
difficulty of maintaining, 177; im-Company, 31-2 Silk reeling, 31; decline of, 34 Silver, 153-5 Simpson, C. B., comparison of labor provement of, 180; in old Asia, 176; metalled, 180; privately built, 176; South India, 177; trunk, 180 Rope-making, 90-1; child labor in, 91 Ross, Sir Ronald, quoted regarding housefficiency in cotton mills, 373-4 Singbhum, ore production, 282 Sirdar, on tea plantation, 66 Skrine, F. H., 468; studies of incomes, ing, 397 Routes to India, 177 357-8 Slave plantation, influence on India, Royal Commission on Indian Currency 50 and Finance, on jute wages, 328; on Small-pox, prevalence of, 9 nature of the Indian monetary system, Social Inheritance, influence of, 11 Social organization, in agricultural vil-475 lages, 13; relation to resources, 11-12 Royal Commission on Labour in India, 446 Social Order, stability of, 1 Rubber Plantations, average number of Social Service, in the Orient vs. in America, 415
South India road, 177
Speculation, early, through operations, 161 workers, 73; average size of, 73; Burma, 73; effect of war on, 73; European interest in, 73; introducbanking tion of, 72; machinery on, 73; profits Spice trade, early importance of, 30 in, 74; prospects for, 74 Rubber production, 72-4 Spinning, hand, 77, 100 Rupee, exchange value of, 1873, 319; fluctuating value of, 156; gold value Spinning-labor efficiency, international comparisons, 368-9 Spinning mills, early types, 127 Spirits, import duties on, 163 of, 156; increased value of, 156-7; stabilization, and Indian trade, 476; stabilization of, post-war, 475; sta-bilization, reasons for the high rate, Steam engines, early use of, 127-8; 256 Steam navigation to India, 177 476; token money, 155-6; value, and British interest, 475; value, and cot-ton goods trade, 226; value of, Steam power, in early silk manufacture, Steam shipping, introduction of, 127 Steel, Americanized plant, 286; and iron industry, Indian progress in, 288; Russian tea market, 174 and pig iron production per annum, Ryots and indigo planting, 38 286; annual production of, 386; Indian use of, 274
Steel Industry, adaptation from village Sacred animals, 18-19 Salami, 260 life required, 289; child labor in, Sanitation, in industrial areas, 389; lack

of in factory workers' districts, 397 Santal miners, number of wives, 273 290; foreigners employed in, 287, 289;

high cost of management, 287; in-

fluence on quality of labor, 289; labor cost, 365; lack of native officials, 365; markets for, 290; physical efficiency required, 290; production costs, 291-2, 365; protection of, 164, 286; women employees in, 290 Strikes, 416; early punishments for, 419; general, in mills, 173; in Budge Budge jute mill, 421; in cotton mills, 213; legal and illegal, 449; post-war, 426-Sub-contractors, in coal mining, 122

tion, 225 Suez Canal, effect on India, 129 Sugar cane, 88 Sugar factories, 87-8; employees in, 87, 88

Subsidies, and Japan-Indian competi-

Sugar, per capita consumption of, 88; production, 87

Sumner, John, 255

Sunday observance, increasing in Indian mills, 316; Indian disregard for, 314-15; in European owned mills, 314 Superstition, prevalence of, 17 Swadeshi movement, influence on bank establishment, 162

Tagore, Babu Dwarkanath, 256 Tailoring, 90 Tanners, position of, 81

Tanning, employees in, 80; handicraft vs. factory, 93; methods, 81; prejudice against, 80

Tariff, 163-5; American on jute fabrics, 371; "discriminating," 164; duties for revenue, 164; Empire, 164; on galvanized sheets, 164; on piece goods, 164; on steel rails, 164; on yarns, 164; preferential, 467; protection of cotton,

rion, steel, 164; protective, 164
Tariff Board, 266, 375; and cotton industry, 225; and protection to steel manufacture, 291; attempts at cost reduction in steel manufacture, 292; recommendation regarding bleaching and printing, 215; recommendations regarding fining of laborers, 336

Tata, House of, as bankers, 162
Tata Iron and Steel Company, 284-7; housing by, 392; Indian control of, 287; location of, 283; wage movements in, 325

Tata, Jamsetji, 202, 205, 206; iron and steel manufacturer, 284-5

Tax, excise on cotton textiles, 163; on gasoline, 181

Taxation, and the rupee value, 476 Taxis, 180

Tea, cess, 174; exporting countries, 67; factories, size and location, 66; gardens, speculation in, 55; machinery, 66; marketing, 67; production per acre, 68; wild, 55 Tea growing, Cachar, 55; Darjeeling, 56; development of, 1850-71, 55; development of, 1885-1929, 56; distribution in provinces, 1927, 56; in mountainous territory, 56; introduction of, 54-8; rainfall requirement, 57; regional percentages, 56; Sylet, 55;

under managing agency system, 58
Tea laborers, abuses of, 61-2; advances to, 61; children, 59-60; contracts, 60; hand, 59; local, at Darjeeling, 60; recruiting of, 60; rentals paid, 64; women, 59-60

Tea plantations, business organization on, 65; capital investments in, 59, 67; changes in wages, 64; consolidation of, 58; cruelties to labor on, 63; family system, 59; justice on, 63; labor, decline in recruiting, 62; labor needed per acre, 59; labor system on, 66; land tenure on, 57; ownership, change in, 68; production expenses of, 57; profits, 68; size of, 66; skilled labor on, 67-8; variation in size, 57-8; wages, on in 1857, 60

Tea trade, Chinese, 54; monopolized by East India Company, 54

Technical education, shortage of, 479

Technical schools, higher, 407
Technicians, foreign, declining number
of, 289; foreign for iron and steel manufacture, 287-90, 365; foreign in iron and steel, wages of, 324; unfitness of Indians as, 365

Tenant rights, 46-7 Textiles, hand production of, 102 Textile industries, Indian efficiency in,

Telegrams, inland, 179 Telegraph, and economic change, 178; development and use of, 179; effect on industrialization, 128; foreign, 179

"The mirror of indigo," 38 Tin plate mill, wages in, 365-6

Tinsel-making, 90 Tobacco manufacture, 88-9; children's labor in, 88; women's labor in, 88; wages in, 89

Tobacco work shops, conditions in, 89 Toddy, alcoholic liquor of lower classes.

411 Trade, financing of, 159-60; place in Indian life, 345; rivalry, 193; value of coastal shipping, 191

Trade unions, Act, 431, 447; Act, effect of, 442; demands of, 433; in cotton mills, 213; statistics of, 431-3. See labor organization

Trade Union Congress, all-India, 434 Trade unionism, developments of outside factories, 442; effect of labor supply on 439; effect of leadership on, 441; effect of types of employers on, 439; effect of type of industry on, 441-2;

experimental state of, 442; factors in growth of, 438-42; mildness of, 424-5. See labor organization

Trade union leadership, 434-8; quality

of, 434-5 Transferred subjects, industry and education, 464

Transportation and economic revolution, 193; and foreign competition, 130; by river, 176; effect on factory development, 129; canal and river, 181; local, 179; means of, 177; motor, 180; of agricultural commodities, 180 Travancore, rubber planting in, 73

Unemployment, rural, and hand spinning, Universities, quality of, 478 Untouchables, customs of, 80 Untouchability, a deep prejudice, 25 Upper India Chamber of Commerce, 175 Usufacture, 99-103

Van Delden, W., on jute mill wages, 327-Vegetable oils, 85-7; uses of, 85 Venereal disease, prevalence of, 9-10 Vermin, in workers' houses, 397 Village economy and railways, 189 Village materials, 14 Village organization, 13-14

Wadia, R. F., evidence regarding hours of labor in cotton gins, 304 Wage secrets, 326

Wage statistics, inadequacy of, 319 Wages, additions through bonuses, 333-4; advance according to type of industry, 330; attempts at reduction, 331; bonuses added to secure loyalty, 334; change in according to industry, 350; changes in, 356; coal mining, 322; coal mining, index numbers, 1890-1912, 322; confiscation of, 337; confusion as to condition of, 349; cotton mill, additional bonus, 331; cotton mill, index number of, 1890–1912, 330; cotton mill, estimate of early rates, 329; cotton mill, increase from 1895-1914, 330; cotton mill, stability of—before 1892, 330; cotton mill, various centers, 1914—1926, 331; deductions by way of fines, 334—9; difference in engineering, 325; difficulty to estimate in international terms, 318; effect of change in, 348; effect on by Crimean and American Civil Wars, 320; factory, relation to mining, 321; factory, summary, 355-6; frequency of payment, jute vs. cotton mills, 339-40; government interest in 1875, 320; government statistics of, 320; "grain allowance," 334; (in Rs.) in a jute mill in Bengal 1896–1921, 327; in a Rani-

ganj colliery, 322; in Bombay cotton mills, index numbers of, 1914-30, 333; in Bombay presidency, 1914-31, 355; in Burma mines, 323; in factories, Ch. XV; in iron and steel manufacture, 1925-30, 325; in kind, 101; in mica mines, 1891, 321; in tobacco manufacture, 88-9; increase in various industries, 320, 354; index numbers of, in Bombay cotton mills, including Bonus for the Years 1918-22, 332; jute mill, effect of World War on, 354; jute mill, 1913-27; 1929, 329; jute mill, in-crease in, 327; jute mill, index numbers of, 327; jute mill, Indian vs. Scottish, 372; jute mill, secrecy of, 326; lack of standardization, 340; lock-making, index numbers of, 325; of foreign technicians in iron and steel manufacture, 324; of jute weavers, 371; on tea gardens, 321, 353-4; post-poned payment of, 339-40; real, 1860-1930, 347-55; real, 1860-1890, summary of for factory hands, 350; real, 1890-1914, 350; real, 1914-30, 351-6; real, disagreement regarding, 347-9; reduction known as dasturi, 337; similarity of, 325; statistics of, 1873-1895, 320; summary of, in Indian factories, 1860–1930, 332–3; tea planting, changes in, 64; their relation to competitive conditions, 324; time of payment, 339-40; use of bonuses, 356; variation in, 324-9; variations according to type of industry, 321 Wagle, Nilkath B., 468 Washermen, work of, 102 Washington Labor Conference, 225 Watt, Sir George, reporter on economic products, 462 Weaving, direct labor cost of, international comparisons, 371 335-6 comparisons, 369-70 Welfare work in factories, 411

Weaving efficiency, international comparisons, 377-9 Weaving, fines for poor workmanship,

Weaving labor efficiency, international

Welfare work, reasons for small amount, 414; textile labor union of Ahmedabad, 414; Y.M.C.A., 413 Western business, spirit of, 53 "White slave traffic", 299

Woman's position, 19 Women's labor and Indian custom, 299 Women's labor, in coal mines, 272-3, 303, 307; in coal mines decrease in, 272-3; in cotton and jute mills, 445; in iron mining, 290; in lac factories, 91; in tobacco manufacture, 88; on plantations, 51

Wood-crafts, 81-82 Woolen goods, for clothing, 404

497

Workers, differences among, 374 Working families, budgets of, 359 Workmen's compensation, Act of 1923, Workshop, centralized, carpet making, 117; hand-loom weaving, 115; lock-making, 115; metal trades, 115; shoemaking, 116; textiles, 116
World War, effect on factory development, 130; India's contribution and the government's fiscal policy, 466n.;

fluence on industrialization, 140 influence on financial policy, 163; in-

Yarn exports, decline of, 221 Yarn imports, pre-war, 221

Zemindars (landlords), 260 Zemindar, place of in indigo planting,

42, 44
Zemidar's rights, in indigo planting, 47
Zerat, organization for indigo planting, 48