Comparative Pedagogics

IN RELATION TO

Public Finance and National Wealth

BY

BENOY KUMAR SARKAR

1929

N. M. RAY CHOWDHURY & CO.

11, College Square,

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Author of Science of Education, Science of History, Positive Background of Hindu Sociology, Die Lebensanschauung des Inders, Hindu Politics in Italian, Economic Development, Political Philosophies Since 1905, Economic Brochures for Young India, etc.

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PREFACE

The categories, primary, secondary, University and professional, as applied to education, embody different contents in different countries. In pedagogics as in exports and imports, prices and wages, taxes and rates, family-budgets, forms of business organization, occupational classes, crimes and penalties, moral codes and other items of societal life the preliminary problem for the statistician consists therefore in discovering the very basis for comparison, the common denominator. How difficult this question of the comparability of pedagogics as of economic and other phenomena is, will be apparent to every reader of this monograph.

The attempt to establish equations between nations in the field of education has had to encounter at the very threshold the problem of diverse age-groups and their bearings on academic values. International comparisons in this as in other fields are liable to be fraught with grave fallacies unless care be taken to adjust the figures available in official, business or other statistics. The figures, therefore, have been adjusted as far as practicable for the purposes of the present study,—in order to bring them down to a uniform basis,—so that educational achievements might be measured by a universal standard.

The complications arising from the varied contents of professional education will perhaps be easily under-

stood. The terms, higher and lower, as employed in the departmental statistics of this item, are exceedingly vague, as would have appeared to almost every observer of world-culture. Students of comparative statistics should not therefore be treated as too pessimistic if they were led to suspect, for instance, that in terms of curriculum of studies the provisions for higher professional education of the world-standard have not perhaps yet been made in India except to a certain extent in law and medicine.

And so far even as general education is concerned, the problem before the students of international statistics, paradoxically enough, should appear to be equally if not more stiff. Two simple questions might be asked : (1) To which academic groups of the Eur-American system do the Matriculates of India really correspond ? and (2) To which academic groups of the Eur-American system do the B.A's and B.Sc's of India really correspond ? The answers from the point of view of age-groups are indeed objectively clear. But in regard to the substance and quality of instruction students of comparative pedagogics will perhaps be permitted to doubt if the "real University" education such as prevails among the "great powers" has yet gone beyond its non-age in India.

The questions are serious. And one object of this investigation into the efficiency of peoples would be served if the students of applied sociology and societal reconstruction in the different parts of the world were to approach their problems, whether in questions of

pedagogics, poverty, population or punishment, in the same manner as is evidently inspiring the economic statisticians who met at Geneva towards the close of the last year under the auspices of the Economic Committee of the League of Nations. The economic statisticians are at last officially convinced that the absence of uniformity in the methods of compilation results virtually in rendering the statistical data very often almost worthless for purposes of scientific investigation or business inquiry. They are therefore uniting their efforts in order to achieve better comparability in regard to the external trade, occupations, agriculture, forestry, fisheries, mining, metallurgy, industry in general, and index numbers of prices. Better comparability in pedagogics also should be the objective of statisticians in the immediate future.

Superficially speaking, it is enough to know the formal categories, viz., for instance, that so many students between the ages of 19 and 22 are at school in institutions called Universities. The real problem, however, lies in the factual contents of the categories. Contentually speaking, is the equipment imparted to the youths of Leeds or Leipzig during three or four or five years identical with the values with which the Universities, say, of Bombay and Calcutta seek to endow the Indian youths of the same age-group and between the same time-limits ? The honest objective reply should be in the negative.

The simple arithmetic of 4 years means two different things in two different spheres. Four years of schooling

at one centre may be equal to not more than two years of schooling at another centre for the youths of identical age. In education as in other activities the statistician is faced therefore with the problem of "weighting". The modern students of weights in Statistics are every day corroborating the old Hesiodic paradox which says that "part is greater than the whole." In the pedagogic world Oxford 3 is greater than Calcutta 4. The explanation perhaps is sociological in a wide sense. But the fact is there.

Mere figures can in reality tell no significant tale.* The adjustments of official figures that have been effected for this monograph indicate the lines along which the educational statistics of the world require to be weighted before employment for comparative studies. The equations that I have sought to establish are founded on these attempts at weighting.

The difficulties of the task are not easy to surmount. But so far as India is concerned there can be no vagueness in regard to the moral of this monograph. India's achievements in the field of education during the last fifty years or so, although quite mentionable, do not rise above a very modest level. And the dynamics of comparative statistics should counsel us perpetually to watch the pedagogic coefficients of the great powers and attempt to hasten our progress towards the next higher flights by a really liberal utilization of public finance and national wealth on the entire educational front.

* See pp. 57, 61, 64, 68, 70, 86, 100, 103.

For some of the material that has been helpful in a general manner in the preparation of this study I am indebted to the friendly co-operation of Mons. Firmin Roz of the *Office National des Universites et Ecoles Francaises,* and Professors Vidal of the *Societe d' Economie Politique* of Paris, Mortara, Editor, *Giornale degli Economisti e Rivistadi Statistica* (Milan), Schumacher of the University of Berlin, Remme of the Prussian Ministry of Education, Matschoss, Director, *Verein Deutscher Ingenieure* (Berlin), and Sorokin of the University of Minnesota (U.S.A.).

BENOY KUMAR SARKAR

CALCUTTA,
22 February, 1929.

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APPENDIX

* (The main headings in the chapter on Bengal are explained in that on British India).

Comparative Pedagogics

Some Efficiency Tests of Social Statistics

The efficiency of individuals or groups, whether economic, political or cultural, is not exclusively dependent on education. There are many other factors besides education which play a formative force in the human personality. But all the same, the importance of education, literary, scientific and technical, in individual or collective efficiency cannot be entirely ignored.

Schools and colleges cannot indeed be appraised as the sole or even as the dominant factors in personal or national worth. But in no scientific study of a people's working capacity or possibilities of achievement should it be reasonable to leave out of consideration its educational institutions, primary, secondary, university and professional.

The object of the present monograph is to investigate some of the foundations of the working capacity of Bengal,—the possibilities of achievement in different lines for the Bengali people. The tests applied are twofold : first, the quality, quantity and variety of educational institutions, and secondly, the amount of money spent on them by the state. The treatment is comparative. The seven great powers have all been brought down to the common pedagogic denominator

as far as possible, and India (as well as Bengal) has been placed in the perspective of world-pedagogics for the post-war decade. The pedagogics and public finance of Bengal are thus measured by the world-standard, and an attempt is made to establish the coefficients (or ratios) of efficiency for Bengal on a more or less universal basis.

France*

	Area in sq. miles	Population	Inhabitants per sq. mile
1872	207,054	36,102,921	174
1921	212,659	39,209,518	184
1926	...	40,743,851	191

Educational Legislation in France

1850 The law establishes *le regime de la liberté.*

1879 Every *département* is to maintain 2 primary normal schools (one for men and the other for women teachers).

1881 Instruction becomes absolutely free in all primary schools.

1882 Instruction becomes *obligatoire* (compulsory) for all children from 6 to 13.

1886 The "organic law" of primary instruction requires teachers to be lay. The educational system is divided into three stages: (1) primary, (2) secondary and (3) "*superieur*" or higher.

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* More recent figures are not available in the chapter on *Instruction publique* for France in the *Annuaire General 1928* (Larousse, Paris, 1928).

On French technical education, See Sarkar: *Economic Development* (Madras, 1926), first three chapters.

1896 The law confers *une large autonomie financiere et administrative* on the 17 universities into which "higher" education is grouped that year.

1919 The *Loi Astier* (Astier Act) reorganises technical and professional education and introduces compulsory free courses for workers.

Kindergartens (Ecoles maternelles) in France (1924-1925)

Public	3,049	Institutions	328,416	Scholars
Private	687	,,	38,381	,,
Total :	3,736	,,	366,797	,,

Elementary Education in France (1924-25)

I. Primary Schools

Public	68,899	Institutions	3,060,921	Scholars
Private	12,127	,,	766,844	,,
Total :	81,026	,,	3,827,765	,,

II. Higher Elementary Schools

	Institutions	Scholars
For boys	281	37,556
For girls	204	33,907
Total :	485	71,463

Total of Primaries and Higher Elementaries :

Number of Institutions : 81,026 + 485 = 81,511

,, Scholars : 3,827,765 + 71,463 = 3,899,228

In a population of 40,743,851, the "primary" scholars number 3,899,228 in 1924-25. Thus they constitute $\frac{3,899,228}{40,743,851} \times 100\%$, i. e., 9·5% of the total population.

[N. B. In 1924, 8·9% of the conscripts could neither read nor write.]

Secondary Schools in France (1924-25)

For Boys : 7 years' course (Age, 13-20)

Lycees (State)	125	Institutions	78,782	Scholars
Communal Colleges	243	,,	41,747	,,
Total	368	,,	120,529	,,
For Girls				
Lycees	69	,,	33,545	,,
Colleges	94	,,	15,767	,,
Secondary courses	43	,,	4,648	,,
Total	206	,,	53,960	,,

Total secondary scholars : 174,489. They constitute $\frac{174,489}{3,899,228} \times 100\%$, i.e., 4·5% of the Primaries.

[N. B. If the lower and intermediate professional scholars were added, the number of Secondaries would be doubled.]

The Secondaries constitute $\frac{174,489}{40,743,851} \times 100\%$, i. e., ·4% of the total population.

Universities in France (1925)

Institutions— 17
Students—52,960

The University scholars constitute $\frac{52,960}{174,489} \times 100\%$, i.e., 30% of the Secondaries.

They constitute $\frac{52,960}{40,743,851} \times 100\%$, i. e., ·13% of the total population. There are thus 13 University students for every 10,000 inhabitants in France.

Higher Professional Education in France

1. Conservatoire des Arts et Metiers, Paris
2. Ecole centrale des Arts et Manufactures, Paris
3. Ecole des hautes etudes commercials, Paris
4. 15 higher schools of commerce with 3,161 scholars (1924)
5. Ecole Polytechnique.
6. 4 Ecoles des Mines (Paris, St. Etienne, Alais, Duai)
7. Ecole des Ponts et Chausses, Paris
8. Ecole des Beaux-Arts
9. Naval Schools
10. Military Schools

Intermediate Professional Education in France

Seven Types

1. Ecoles nationales des Arts et Metiers—6

2. Ecoles nationales professionnelles—6 ; 2,536 scholars (1926)
3. Ecoles pratiques de commerce et d'industrie : lower—65 Institutions for boys, 17 for girls ; 42,409 scholars (1925)
4. Ecoles nationales d'agriculture of all sorts
5. Horticultural schools
6. One ecole nationale d'agriculture for women

[Nos. 4-6—150 Instiutions.]

7. Ecoles nationales veterinaires—3

Lower Professional Education in France (1925)

35 schools of industries	5,550	scholars
13 municipal professional schools in Paris	1,385	,,
370 private schools	92,000	,,
	98,935	,,

Educational Budget in France

	Public Expenses on Education Francs	Total Public Expenditure Francs	Total Public Revenues Francs
1926	1,613,973,330	37,338,389,202	37,498,739,468
1927	2,056,514,080	39,382,349,274	39,960,481,489

Educational expenses constitute the highest single item after finance, military, and naval.

They make $\frac{2,056,514,080}{39,382,349,274} \times 100\%$, i. e., 5% of total public expenditure.

State educational expenses come up to $\frac{2,056,514,080}{40,743,851}$ francs, i. e., 50·4 francs *per capita*. This is nearly £ 0-8-0 at the rate of £ 1 = 124 francs (1928), i. e., Rs. 5-5-3 per head of population (@ Re 1 = 18d).

Japan*

	Area in sq. miles	Population	Inhabitants per sq. mile
1925	147,657	59,736,822	404·5

Kindergartens in Japan (1922-23)

Children's age—between 3 and 6 years

Public	267	Institutions	32,739	Scholars
Private	477	,,	31,953	,,
Total :	745	,,	64,692	,,

Elementary Schools in Japan (1922-23)

Scholars' age—6th-14th year

	Institutions		Scholars
Government	4	...	2,392
Public	25,439	...	8,986,720
Private	139	...	31,507
Total	25,582		9,020,619

* Based on *the Fiftieth Annual Report of the Minister of State for Education* for 1922-23 (Tokyo, 1927). More recent figures are not available in *The Japan Year Book*, 1928.

In a population of 59,736,822 the "primaries" constitute $\frac{9,020,619}{59,736,822} \times 100\%$, i. e., 16·7% of the total population (cf. 9·5% France, 1924).

School Hygiene in Japan (1922-23)

Schools having their own physicians	21,115
School physicians	22,030
State grant	871,132 yens
	(=Rs. 1,306,698 @ 1 y=R 1½)

Secondary Schools in Japan (1922-23)

	Institutions				Scholars
	Govt.	Public	Private	Total	
Middle	2	334	86	422	219,102
Girls' High	3	499	116	618	206,864
Higher	21	...	1	22	11,921
Total	26	833	203	1,062	437,887

The total secondaries constitute $\frac{437,887}{9,020,619} \times 100\%$, i. e., 4·8% of the primaries (cf. France 4·5 %).

They constitute $\frac{437,887}{59,736,822} \times 100\%$, i. e., ·7% of the total population (cf. France .4%).

University Education in Japan (1922-23)

	Government	Public	Private	Total
Universities	8	4	14	26
Scholars	12,721	1,388	21,054	35,163

The University scholars constitute $\frac{35,163}{437,887} \times 100\%$, i. e., 8% of the secondaries (cf. France 30%).

They constitute $\frac{35,163}{59,736,821} \times 100\%$, i.e., ·058% of the total population. In Japan there are 5·8 University scholars for every 10,000 inhabitants. cf. France, 13 for every 10,000.

Higher Technical and Professional Education in Japan (1922-23)

A. "Government Special Technical Schools": students admitted after the secondary stage.

	Institutions	Scholars
Agricultural	7	1493
Commercial	7	3342
Technical	15	4836
Nautical	1	267
Total	30	9,938

The higher professionals constitute $\frac{9,938}{35,163} \times 100\%$, i. e., 28% of University scholars.

B. "Special Schools": students admitted after the secondary stage.

	Institutions	Scholars
Medicine and Pharmacy	4	1,544
Foreign languages	2	1,462
Fine Art	1	670
Music	1	788
Other special schools	71	34,484
Total	79	38,948

It is doubtful, however, if the scholars of these "special schools" should be regarded as belonging to the same academic rank as those of the 30 Government Special Technical Schools.

Total higher professionals: 9,938 + 38,948 = 48,886

"Intermediate" Technical and Professional Education in Japan (1922-23)

Students admitted after the elementary stage.

	Institutions	Scholars
Technical	100	21,295
Agricultural	326	51,050
Fisheries	12	1,129
Commercial	191	75,840
Nautical Schools of Secondary grade	11	2,611
Industrial	78	15,606
Total	718	167,531

Continuation Technical Schools in Japan

After the elementary stage: scholars already in service.

	Institutions	Scholars	
Technical	120	8,236	
Agricultural	11,506	560,084	(164,421
Fisheries	192	7,695	women)
Commercial	420	28,750	
Nautical	2	191	
Other Continuation	2,635	159,311	
Total	14,875	764,267	

Total professionals: 48,886
167,531

216,417 excluding Continuation
764,267

980,684 including Continuation

The professionals in Japan constitute $\frac{980,684}{59,736,822} \times 100$%, i.e., 1·6% of the total population.

Educational Budget in Japan (1927)

Total public revenue (ordinary)	1,365,490,995 Y.
Total public expenditure (ordinary)	1,075,470,276 Y.
Educational expenditure ...	103,752,440 Y.

Educational expenditure is the highest single item after finance, communication, army and navy.

It constitutes $\frac{103,752,440}{1,075,470,376} \times 100\%$, i.e., 9·6 per cent. of total expenditure (cf. France 5%).

This makes $\frac{103,752,440}{59,736,822}$ or 1·7 yen *per capita*, i.e., Rs. 2-4-3 per head of population @ 18d = Re. 1 (cf. France, Rs. 5-5-3).

Educational and Cultural Environment in Japan (1922-23)

Libraries 2,389 with books 5,939,821 (Japanese and Chinese 5,626,863 + 312,958 Eur-American).

Original books and translations published		10,946
Periodicals	„ ...	4,592

Italy*
(including Sicily and Sardinia)

	Area in sq. miles	Population	Inhabitants per sq. mile
1872	...	26,801,154	...
1911	...	34,671,377	...
1926	119,714	40,548,683	323·7

Illiteracy in Italy

	above 6 years	between 12 and 15
1872	69%–80%	
1882	62%	
1901	48%	37·6 %
1911	38%	24·6 „

Kindergartens (Asili) in Italy

Children's age	...	3–6 years
Institutions	...	5,902
Scholars	...	195,695 boys
„	...	200,537 girls
	Total	396,232

* The figures for Italy are adapted from the *Statesman's Year-Book* (London).

The figures given here are to a certain extent different from those in *Movimento Economico dell'-Italia* published by the Banca Commerciale Italiana (Milan, 1928).

Primary Schools in Italy

Scholar's age : 7–12 years (Law of 1923)

	Institutions	Boys	Girls
Lower (after *Asili* for infants or Kindergartens : school term 2 years)	23,025	303,076	247,750
Higher (3 years)	102,517	1,777,227	1,602,314
	125,542	2,080,303	1,850,064
	Total scholars	3,930,367	

The primaries constitute $\frac{3,930,367}{40,548,683} \times 100\%$, i.e., 9·67% of the total population.

Secondary Schools in Italy (1922-23)

	Institutions	Scholars
Government	431+320+179+53+7=990	126,353
Private	183+378+137+45 =743	31,702
	Total 1,733	158,055

The secondaries constitute $\frac{158,055}{3,930,367} \times 100\%$, i.e., 4% of the primaries.

They constitute $\frac{1580,55}{40,548,683} \times 100\%$, i.e., ·35% of the total population.

Universities in Italy (1924-25)

	Institutions	Scholars
Government	20	
Free ...	5 ...	30,512

The University scholars constitute $\frac{30,512}{158,055} \times 100\%$, i.e., 19·3% of the secondaries.

They constitute $\frac{30,512}{40,548,683} \times 100\%$, i.e., ·075% of the total population or 7·5 for every 10,000.

Higher Professional Education in Italy

	Institutions	Scholars
Commerce	9	4,252 (1924)
Agriculture	5	759
Engineering	8	5,809
Naval	2	516
Forestry	1	30
	25	11,366

The higher professionals constitute $\frac{11,366}{30,512} \times 100\%$, i.e., 37% of University Scholars.

Other Higher Professional Education in Italy

	Institutions	Scholars
Social Science ...	1	227
Oriental languages	1	119
Veterinary ...	6	731
Women's training college	6	907
Architecture ...	1	109
Industrial Chemistry	1	148
Economics and commerce	1	117
Obstetrics ...	1	19
Total	18	2,377

Secondary Professional Education in Italy

	Institutions				Scholars
	Technical	Nautical	Normal		
Government	111 +	17 +	91	= 219	61,560
Private	250 +	3 +	139	= 392	20,433
			Total	611	81,993

Total Professional Scholars in Italy (1924)

Secondary	...	81,993
Higher (1)	...	11,366
„ (2)	...	2,377
Total		95,736

Educational Budget in Italy (1927)

Public Expenditure on Education		1,072,268,287 lires
Total Public Expenditure	...	14,099,915,952 lires
Total Public Revenue	...	18,067,222,703 lires

Educational expenditure is the largest single item after finance and war. It constitutes $\frac{1,072,268,287}{14,099,915,952} \times 100\%$, i. e., 7·6% of the total public expenditure.

State Educational Expenses (1927) constitute $\frac{1,072,268,287}{40,548,683}$ lires, i.e., 26·4 lires per head of population, nearly £ 0-6-0 (at exchange £ 1 = 92 lires), i.e., Rs. 4-0 0 (at 18d. = 16 annas).

Germany*

(including Saar)

	Area in sq. miles	Population	Inhabitants per sq. mile
1925	181,714	63,118,782	347

Primary Education in Germany (Law of 1920)

Elementary schools take the scholars after the Kindergarten (3-6 years) and teach them up to the 14th year. Two grades are to be distinguished :

1. *Grundschule*

and 2. *Volksschule*

Expenses are partly State (mostly for *personnel*), and partly municipal (school-buildings, etc.).

Elementary Schools in Germany (1922)

(up to the 14th year)

	Schools	Scholars		
		Boys	Girls	
Public	52,763	4,465,183 +	4,429,303 =	8,894,486
Private	675	14,986 +	20,598 =	35,584
Total	53,438	4,480,169 +	4,449,901 =	8,930,070

* These figures are taken from the *Statesman's Year-Book* (London, 1926) but differ from those in the *Statistisches Jahrbuch fuer das Deutsche Reich* (Berlin, 1928) in which the private schools are not mentioned. For 1926-27 the German publication gives 52,785 and 6,659,769 as the figures for schools and scholars.

The primaries constitute $\frac{8,930,070}{63,118,782} \times 100\%$, i.e., 14·1% of the total population ; cf. France 9·5%
Japan 16·7%
Italy 9·67%

Secondary Schools in Germany (1922)
(9 years' course)

For boys :

Gymnasia :	515 Institutions	152,367 Scholars	
Realgymnasia :	322 ,,	115,615 ,,	
Oberrealschule :	506 ,,	184,175 ,,	
etc.			

For girls :

Lyceen *Oberlyceen* *Studienanstalten*	824 Institutions	299,285 Scholars	
Total	2,167 ,,	751,442 ,,	

The secondaries constitute $\frac{751,442}{8,930,070} \times 100\%$, i. e., 8·4% of the primaries; cf. France 4·5%
Japan 4·8%
Italy 4·%

They constitute $\frac{751,442}{63,118,782} \times 100\%$, i.e., 1·1% of the total population; cf. France ·4%
Japan ·7%
Italy ·35%

Universities in Germany (1925)

Institutions	23
Professors	4,853
Scholars	60,879 + 12,370 (more or less external) = 73,249*

Faculties : (1) Theology, (2) Law, (3) Medicine, (4) Philosophy, (5) Mathematics and Science.

The University students constitute $\frac{73,249}{751,442} \times 100\%$, i.e., 9·7% of the secondaries.

They constitute $\frac{73,249}{63,118,782} \times 100\%$, i. e., ·11% of the total population or 11 for every 10,000.

Higher Technical and Professional Education in Germany (1925)

10	Technical *Hochschule* :	26,126	Scholars
2	Veterinary ,, :	396	,,
4	Agricultural ,, :	2,617	,,
3	Forestry ,, :	316	,,
2	Mining ,, :	1,381	,,
5	Commercial ,, :	7,091	,,
26	,,	37,927	,,

* For 1927-28 the *Statistisches Jahrbuch fuer das Deutsche Reich* (Berlin, 1928) gives 71,649 + 8,132 = 79,781 as the corresponding figure.

Other Higher Professional Education in Germany (1925)

8	Theological Colleges Special :	789	Scholars
1	Practical Medicine :	50	„
14	Art ... ... :	2,180	„
10	Music ... ... :	3,052	„
33		6,071	„

Total Higher Professionals (1925)

33+26=59 Institutions. 37,927+6,071=43,998 Scholars.

The higher professionals constitute $\frac{43,998}{73,249} \times 100\%$, i.e., 60% of University scholars ;

cf. France —
Japan 28%
Italy 37%

Intermediate Technical Education

		Institutions	Scholars
1921	Architecture Schools :	60	12,730
1922	Metal Industry :	35	—
1922	Manufacture :	1	—
—	Spinning and Weaving :	—	—
1922	Industrial Arts :	85	—
1924	Mining (Prussia) :	11	1,759
1924	Navigation :	12	1,658

1924	Seminar for Agriculturists (after secondary stage) :	11	—
1921	Schools for sons of peasants in Prussia :	300	21,000
	In other parts of Germany :	150	—
1924	Semi-agricultural Schools (after elementary stage) :	21	—
1924	Higher Gardening Schools	6	—
1924	Land Improvement Schools	5	—
1920	Gardening	80	3,000
1924	Animal breeding	25	—
1924	Dairy	12	—
1924	Other Agricultural Industries (alcohol, sugar, etc.)	9	—
—	Horse-Shoeing	60	—
—	Forest	4	—

The above list is not exhaustive. Besides, there are schools for special industries ; such as for 1. Smithies. 2. Installations. 3. Instruments and Machine-tools. 4. Clocks and Watches. 5. Precious Metals. 6. Wood carving. 7. Toys. 8. Musical Instruments. 9. Willow reeds. 10. Chemical Engineering. 11. Paper Manufacture. 12. Dyeing. 13. Soap-making. 14. Bricks and Tiles. 15. Porcelain. 16. Glass. 17. Photography. 18. Leather Industry. 19. Garment making. 20. Food Products. 21. Hotel Management.

Higher Commercial Schools in Germany

below *Handelshochschule* (1919)

Minimum age : 18 (*Gymnasium*-passed).

Institutions	Scholars
35	600 boys
	1,300 girls
Total	1,900

Commercial Classes in Secondary Schools (Handelsrealschule)

	Institutions	Scholars
1921	11 (Saxony)	2,023
	46 (other provinces of Germany)	3,059
	Total	5,082

Lower Commercial Schools in Germany (1919)

Minimum age : 14.

Institutions 70. Scholars 2100 boys + 6900 girls = 9,000.

Intermediate and Lower Commercial Education in Germany (1919)

Institutions 35 + 11 + 46 + 70 = 162

Scholars 1900 + 2023 + 3059 + 9000 = 15,982

Special Professional Schools for Women

Institutions :

Domestic Science (*Haushalt*)

Industrial Schools (*Gewerbe*)

Technical Schools (*Assistentinn*)

Welfare Schools (*Wohlfalut*) : 40 (1925)

Higher and Intermediate Professionals in Germany

Higher	...	43,998
Intermediate	...	16,147
,,	...	21,000
,,	..	3,000
,,	Commerce	15,982
	Total	100,127

Vocational (Continuation) Schools in Germany

(Scholars between 14 and 18)

		Institutions	Scholars
1920	Trade Schools	850	140,000
1910	Industrial Schools	3,600	540,000
1922	Factory-Schools	95	13,738
—	Railway Schools	—	—
1912	Government Mining Schools (Saar)	56	4,190
1912	,, (Upper Silesia)	—	1,059
1922	Mansfeld Mining Schools	70	2,000
—	Westphal ,,	120	5,000
—	Rural Schools	—	—
—	Women's Schools	—	—
		4,791	705,987

The list is not exhaustive.

*Total Professionals in Germany**

Higher and Intermediates	...	100,127
Vocationals ...	...	705,987
		806,114

The list is not exhaustive. All the same, the professionals in Germany constitute $\frac{806,114}{63,118,782} \times 100\%$, i.e., 1·2 % of the total population.

Educational Budget in Germany

Figures of German public finance such as might be used for the present study in the manner corresponding to that for the other countries cannot be made up from the *Statistisches Jahrbuch fuer das Deutsche Reich* nor from the *Annuaire General* or the *Statesman's Year-Book*. But from the German publications it is perhaps possible to make out that in 1913-14 the government expenditure on education (elementary, continuation, technical and higher) amounted to 16·12 Marks per head of the population. In 1925-26 the amount rose to 26·34 Marks, which means practically so many shillings, i. e., nearly Rs. 17-9-0 *per capita*.

* See the chapters on technical and professional education in Sarkar : *Economic Development* (1926) and Kuehne (editor) : *Handbuch fuer das Berufs-und Fachschulwesen* (Leipzig, 1923).

Soviet Russia (U. R. S. S.)

	Area in sq. miles	Population	Inhabitants per sq. mile
1914	—	178,378,800	—
1925	8,186,144	139,753,900 (22,979,800 urban, 116,774,100 rural)	17

Illiteracy in Russia

1918 In December an Act is passed in order to combat illiteracy of persons between 8 and 50.

1921 5 millions are taught to read and write.

1921-26 7-8 millions of adults are taught to read and write.

1923 The government decides to remove illiteracy among the adults under 35 in the "province" of R.S.F.S.R. (Population 96,746,300) by Nov. 1927.

Categories of Educational Institutions in U. R. S. S. (1924)

I. Social Education : (1) primary, (2) secondary.

II. Professional Education : (1) higher, (2) intermediate and (3) lower.

III. Higher Education : (1) Universities, (2) higher technical and (3) working men's faculties.

IV. Political Education.

V. Education of the Nationalities or Minorities.

Educational Legislation in Russia

1921-22. The "New Economic Policy" removes educational expenses from the State to the local budget.

Private schools are not allowed.

1922. Organisation :

general elementary } *Prescolaire* : 3rd-8th year : Infants
First Degree : age 8-12 years

general secondary } Second Degree : age 12-17 years

Elementary and Secondary Schools in Russia (1924)

		Schools	Scholars
1.	*Prescolaire* (3-8 years)	1,208	58,420
2.	*Asiles d'Enfants*	4,937	353,601
3.	First Degree (8-12 years)	71,245	5,213,231
	7-class school	16,935	1,890,056
4.	Second Degree (12-17 years)	1,466	317,842
	9-class school	817	401,454
	Ecoles Communes et Colonies	348	30,816
	Total	96,956	8,265,420

Elementary Schools in Russia

It is not possible to get exact figures for schools and scholars from the 6th to the 14th year for the purposes of comparison with the other countries. We are not only compelled to include the Kindergartens but go up to the 12th year only. The list comprises (1) prescolaire, (2) asiles, (3) First Degree and (4) 7-class school.

1924	Institutions	Scholars
	94,325	7,515,308
	7,515,308	

These constitute $\frac{7,515,308}{139,753,900} \times 100\%$, i.e., 5·3% of the total population; cf. France—9·5 %, Japan—16·7 %, Italy—9·67%, Germany—14·1%.

Legal and Social Protection of Minors in the U. R. S. S. (1924)

		Institutions
1.	Receiving, Isolation and Distribution Centres	375
2.	Schools for Defectives	60
3.	Schools for morally abnormal	88
4.	Schools for physically abnormal	52
5.	Children's homes for Defectives	57
6.	Children's homes for morally abnormal	123

7.	Children's homes for physically abnormal	80
		835 (with about 350,000 scholars)

Elementary Education in Pre-Bolshevik Russia (1914)

Schools	Institutions	Scholars
First Degree	62,050	4,186,180
Kindergartens	367	—
Asile	921	—
Total	63,338	4,186,180

In Czarist Russia with a population of 178,378,800 (1914), the "primaries" constituted $\frac{4,186,180}{178,378,800} \times 100\%$, i.e., 2·3% of the total population.

Secondary Education in Russia (1924)

Here, again, it is difficult to find the exact number of schools and scholars for the ages 14-20. We take (1) the Second Degree (12-17 years) school and (2) 9-class school: Institutions 2,283. Scholars 719,296.

The secondaries constitute $\frac{719,296}{7,515,308} \times 100\%$ i.e.,

9·5 % of the primaries; cf. France 4·5%, Japan 4·8%, Italy 4·%, Germany 8·4%.

The secondaries constitute $\frac{719,296}{139,753,900} \times 100\%$, i.e., ·5% of the total population; cf. France ·4%, Japan ·7%, Italy ·35%, Germany 1·1%.

Secondary Education in Pre-Bolshevik Russia (1914)

Second Degree Schools: 867
" " Scholars: 256,551

The secondaries constituted $\frac{256,551}{4,186,180} \times 100\%$, i.e., 6% of the primaries.

The secondaries constituted $\frac{256,551}{178,378,800} \times 100\%$, i. e., ·14% of the total population.

Higher Education in U. R. S. S. (1924)

		Institutions	Scholars
1.	Universities	23 (8 in 1914)	69,899
2.	Other Higher Schools	10 —	2,750
3.	Medicine	24 —	26,078
4.	Pedagogics	27 —	24,490
5.	Agriculture	43 —	20,877

6.	Technical	27	—	43,956
7.	Industrial and Economics	9	—	10,491
8.	Music and Fine Arts	20	—	9,978
9.	Communist Propaganda Schools	12	—	6,296
10.	Workingmen's Faculties	136	—	45,661

The University students in U.R.S.S. (1924) constitute $\frac{69,899}{719,296} \times 100\%$, i.e., 9·7% of the secondaries; cf. France 30%, Japan 8%, Italy 19%, Germany 9·7%.

University students in Russia (1924) constitute $\frac{69,899}{139,753,900} \times 100\%$, i.e., ·05% of the total population or 5 for every 10,000. cf. France—13, Japan—5·8, Italy—7·5, Germany—11.

Workingmen's Faculties

Attached to Higher Schools (Minimum age 18).

1919 First established at the Marx Institute of Economics (Moscow).

	Number of Faculties	Scholars
Previous to 1924		11,000 scholars were sent up to the Higher Schools by these Faculties.
		45,601
1924	136	8,500 sent up.

Govt. Stipends (Monthly) to Scholars in the Working Men's Faculties

20 roubles per head at Moscow and Leningrad
15 „ „ „ in other cities
25,000 stipend-holders in R.S.F.S.R. } 1924-25
33,819 „ „ in other provinces }

In addition, there are special stipends for workers established by business houses, e.g.,

Moscow—2,872 stipends of 30 roubles each.

Ukraine—8,000 „ ; for the first year the rate is 25 roubles per head, 37·50 roubles per head for students with family.

Higher Professional Education in U. R. S. S. (1924)

Number of Institutions in 1924		Number of Institutions in 1914	Scholars in 1924
24	Medicine	2	26,078
27	Pedagogics	3	24,490
43	Agriculture	14	20,877
27	Technique	13	43,956
9	Industrial and Economics	0	10,497
20	Music and Fine Arts	4	9,978
150		36	135,876

As the academic standard of these institutions can not be guessed, it is not safe to attempt any comparison by the world-standard.

Intermediate (Secondary & Primary) Professional Education in Soviet Russia

	Institutions	Scholars
1914 ...	1,588	130,817
1921 ...	4,283	304,178
1922 ...	2,399	212,917
1923 ...	2,571	271,414
1924 ...	4,043 (?)	402,853 (?)

Intermediate (Secondary) Professionals in U. R. S. S. (1924)

Technicums (intermediate)

	Institutions	Scholars
1. Medicine	66	11,064
2. Pedagogics	273	45,895
3. Agriculture	152	17,707
4. Technique and Transport	219	42,460
5. Industry and Economy	53	10,767
6. Arts and Music	92	19,664
Total	855	147,557

Lower Professional Education (Vocational) in U. R. S. S. (1924)

	Institutions	Scholars
1. Professional Schools	1,408 ...	115,375
2. Apprentice Schools	719 ...	54,790
3. Short Courses	595 ...	41,473
4. Short Courses for Teachers	265 ...	25,215
5. Music	114 ...	14,466
6. Studies	85 ...	3,753
Total	3,186	255,072

cf. Japan 764,267
Germany 705,987

Total Professionals (higher, intermediate and lower) in U. R. S. S. (1924)

135,876 + 147,557 + 255,072 = 538,505

cf. Japan 980,684
Italy 95,736 (?)
Germany 807,114

The professionals constitute $\frac{538,505}{139,753,900} \times 100\%$, i.e., ·38% of the total population.

cf. Japan 1·6%
Germany 1·2%

Institutions of Political Education in U. R. S. S. (1924)

(excluding Trans-Caucasia)

	Institutions	Scholars
1. Liquidation Centre for Illiteracy	14,881	530,921
2. General Culture Courses	507	
3. Communist and Political Courses	715	
4. Studios	199	
5. Libraries	13,445	
6. Reading Rooms	10,430	
7. Clubs	6,109	
8. People's Houses	5,461	
9. Theatres	1,933	
10. Cinemas	848	
11. Museums	758	
Total	55,286	

Educational and Cultural Environment in Soviet Russia

Year	Number of Books Published	Number of Copies Circulated
1912 (Pre-Soviet)	34,630	133,561,886
1925	23,000	242,035,804
1926	25,000	179,266,000

Journals in Soviet Russia (1927)

Class	Number	Circulation
1. Peasant	107	1,491,262
2. "National" (i.e., in non-Russian languages)	201	938,588
3. Worker (in large working-class centres)	58	1,371,479
4. Red Army	14	196,085
5. Young Communist	49	362,611
6. Trade Union	10	791,727
7. Co-operative	8	110,492
8. General	109	2,314,860
Total	556	7,577,104

Educational Budget in Soviet Russia

(Percentage of total budget)

		Educational Expenses	
1914	...	5·7%	
1918	...	6·2%	
1919	...	8 %	
1920	...	10·4%	
1921	...	8·9%	
1922-23	...	3 %	(New Economic Policy)
1923-24	...	3·9%	66,046 Tcherwonetz
1924-25	...	4·9%	114,780 Tch. ,,

State Expenses in U. R. S. S. (1924)

in roubles

Public Revenue	Public Expenses	Educational Expenses
2,935,200,000	2,948,400,000	114,780,000

Educational expenses constitute $\frac{114,780,000}{2,948,400,000}$ × 100%, i.e., 3·8% of the total expenditure.

cf. France 5%
Japan 9·6%
Italy 7·6%

State educational expenses (1924) in U. R. S. S. constitute $\frac{114,780,000}{178,378,800}$, i.e., ·6 roubles (Re. 0-12-9) per head of population. (1 Tch. = 10 roubles; 1 r = 2 shillings = 24d. = ⅔ Rupee).

cf. France Rs. 5-5-3
Japan Rs. 2-4-3
Italy Rs. 4-0-0

Note: It is on *U. R. S. S. Annuire Politique et Economique* 1925-26 (Moscow, 1926), the official Soviet Russian publication (in French), that this chapter is based. The groupings have been adapted to the requirements of comparative statistics. The accounts in the *Statesman's Year Book* (London) and the *Soviet Union Year Book* (London) leave much to be

desired and are to a certain extent misleading. One item may be singled out. At pp. 463-464 the *Soviet Union Year Book* for 1928 has a single section given over to "workers and university education" and furnishes us with the following table:

Universities

	1925-26		1926-27	
	Institutions	Students	Institutions	Students
Workers' Faculties	108	47,174	109	45,702
Universities	138	162,000	124	160,000
Total	246	209,174	233	205,702

Evidently, the figure 138, or even 124, for the number of Universities needs explanation. What kind of institutions from the stand-point of academic rank is to be understood? It would be too much to believe that Soviet Russia possesses 124 Universities of the standing of Paris, Berlin, London and other Universities in Western Europe. Besides, it is questionable to what extent the workers' faculties may be classed with the Universities.

United States*

	Area in sq. miles	Population	Inhabitants per sq. mile
1920	2,973,890	105,710,620	35·5
1925	—	115,378,000	—
1926	—	117,136,003	—

Illiteracy in the U. S. A.

(above 10 years of age)

1880	17 °/₀
1890	13·3%
1900	10·7°/₀
1910	7·7°/₀
1920	6°/₀

Elementary Schools in the U. S. A. including Kindergartens (1924)

22,372,075 Scholars. These constitute $\frac{22,372,075}{115,378,000}$ × 100°/₀, i.e., 19·3°/₀ of the total population.

* The figures for the U.S.A. are culled from various sources. It has not been possible to follow precisely the groupings observed in the other instances.

Secondary Schools in the U.S.A. (1924)

Institutions	Scholars	
High Schools and Academies	3,389,878	Public
	254,119	Private
	3,643,997	
Preparatory Department of Universities and Colleges	14,365	Public
	47, 493	Private
	61,858	
Total	3,705,855	

The secondaries constitute $\frac{3,705,855}{22,372,075}$ × 100%, i.e., 16·5°/₀ of the primaries.

They constitute $\frac{3,705,855}{115,378,000}$ × 100 °/₀, i.e., 3·2°/₀ of the total population.

According to the *American Year Book* for 1926 there are approximately 4,000,000 pupils in the four-year high schools as compared with 1,218,804 in 1913-14. "This takes no account of the enrollments of the evening high schools, co-operative part-time schools, continuation part-time schools, junior high school seventh and eighth grades, or private and parochial schools."

Universities and Colleges in the U. S. A (1924)

Institutions	913	
Scholars :	Men	418,876
	Women	245,390
		664,266
	Public	241,265
	Private	423,001
		664,266

The University scholars constitute $\frac{664,266}{3,705,855} \times 100\%$, i.e., 17% of the secondaries.

They constitute $\frac{664,266}{115,378,000} \times 100\%$, i.e., ·57% of the total population or 57 for every 10,000.

In the case of the American "Universities" and "Colleges" the difficulty arising from the question of grading the institutions is not to be overlooked.

Educational Statistics in the U. S. A.

	Population (years 5-20)	Total Attending School
1850	9,204,908	4,089,507
1870	14,507,658	6,596,466
1900	26,041,940	13,367,147
1910	29,785,997	18,009,891
1920	33,250,870	21,763,275

Professional and other Scholars in the U. S. A. (1924)

	Schools	Scholars
Normal Public	312	229,997
Normal Private	70	15,652
Theology	165	12,358
Law	124	35,732
Medicine	80	18,900
Dentistry	43	12,947
Pharmacy	63	9,951
Veterinary	12	511
Osteopathy	6	1,117
Private Commercial	739	186,368
		523,533
Agriculture (1921)	68	189,168
	Total	712,701

In regard to medical education the following extract from the *American Year Book* for 1926 would be of interest from the standpoint of trend in quality .

"Despite the reduced number of medical schools, graduates are increasing and better qualified physicians are being sent out. In 1906 there were 162 medical colleges,—the largest number in history. This number has diminished since that year until there are 79 remaining in 1926 of which the large majority are

non-sectarian or regular medical colleges, two homeopathic, two eclectic and one non-descript. The trend for fewer and better colleges has been fairly stable since 1922. In 1904 there were 28,142 medical students enrolled, the number decreasing steadily until 1919 when the low enrollment of 12,930 was reached. Since then students have been studying medicine in increasing numbers until the enrollment in 1926 of 18,840 was reached. The activities of the medical associations in raising standards of work have set the pace for similar organisations in the other phases of professional education."

Agricultural and Engineering Colleges in the U. S. A. (1920-21)

Number of State Schools : 68

Instructors ... 17,742

Students ... 189,168

Total Professionals in the U. S. A.

It is not possible to institute comparisons. Total professionals in the U. S. A. : 712,701

The professionals in the U. S. A. constitute $\frac{712,701}{115,378,000} \times 100\%$, i.e., ·61% of the total population ; cf. Japan 1·6%, Germany 1·2%, Russia ·38%.

Federal Grant for Vocational Education

Year	Agricultural Training	Industrial Training including home economics and general continuation education	Teachers' Training	Total
1918	$ 547,027	$ 564,444	$ 544,114	$2,655,586
1926	$3,031,987	$3,056,148	$1,096,765	$7,184,901

Total Expenditure on Vocational Education (1926)

Federal	...	$ 6,548,567
State	...	$ 6,148,942
Local	...	$ 10,482,130
	Total	$ 23,179,639

Educational and Cultural Environment in the U.S.A. (1924)

Dailies	2,310
Weeklies	13,267
Semi-Weeklies	473
Monthlies	3,613
Semi-Monthlies	280
Other Periodicals	738
Total	20,681

The trend may be seen in the following table :

1870	5,871	Journals
1900	20,806	"
1911	22,806	"
1916	23,024	"
1920	21,012	"
1924	20,681	"

Educational Budget in the U. S. A.

	Total Government Expenditure	Teachers' Salaries
1870	$ 63,396,666	$ 37,832,566
1900	$ 214,964,618	$ 137,687,746
1920	$ 1,036,151,209	$ 613,404,578

Educational Burden in the U.S.A.

	Total National Wealth	Educational Cost per $ 1000 of Wealth
1870	$ 30,068,518,000	$ 2·10
1920	$ 290,000,000,000	$ 3·57

Educational Expenses in America (1924)

Public Schools elementary and secondary ... } $ 1,820,743,936

School Income

2·7% from Property
92·1% from Taxation
5·2% from other sources

Educational Expenditure per Capita in ihe U. S. A.

	Expenditure per capita of population	Average per pupil attending
1870	$ 1·64	$ 15·55
1900	$ 2·84	$ 20·21
1910	$ 4·64	$ 33·23
1920	$ 9·80	$ 64·16

Expenditure per head $ 9·80 (1920), i.e., Rs. 29-6-4 @ $ 1 = Rs. 3-0-0 (approximate).

Great Britain*

	Area in sq. miles	Population	Inhabitants per sq. mile
1901		37,518,052	
1911		41,126,040	
1921	89,041	42,919,710	782
1925		43,783,032	
1926		43,970,300	

England and Wales

	Population	Inhabitants per sq. mile
1901	32,521,843	558
1911	36,070,492	618
1922	37,886,699	649
1925	38,890,000	
1926	39,067,000	

Early Educational Legislation in England

1816 The First Education Act is followed by Acts of 1833, 1839, 1840, 1843, 1846, 1853, 1870, 1876.

1833 The first parliamentary grant of £20,000 is instituted. It is ear-marked for school-buildings and is annual. Down to 1833 education was not regarded as a charge on Government finance.

* *The Statesman's Year-Book.*

1846 The annual grants are raised to £40,000 but are ear-marked for buildings.

1853 The annual grants are raised to £260,000. The sums are spent no longer exclusively on buildings but on (1) training colleges and on (2) teachers as well.

1860 The annual grants are raised to £800,000. The purposes are enumerated as follows: (1) buildings, (2) training colleges, (3) teachers' salaries and (4) general expenses. The principle of "so much per head on pupils *in attendance*" is introduced.

1862-69 £840,000 annual in the form of "so much per head on each *successful* pupil". The principle of grant by results is introduced.

1876 Annual Government grant 17s. 6d. per successful scholar; 10 s. school fee (paid by parents) per year.

N.B. Voluntary contributions to schools amounted to £700,000 per year (1878).

Elementary Education in England and Wales (1925)

	Institutions	Scholars	Teachers
Council Schools	9,031		
Voluntary ,,	11,703		
Total	20,734	5,581,468	165,262

The primaries (England and Wales), 1926, constitute $\frac{5,581,468}{38,890,000} \times 100\%$, i.e., 14·3% of the total population.

Free Meals in Elementary Schools (England and Wales)

1923-24	10,975,000
1924-25	10,236,718

Expenditure on Elementary Education in England and Wales (1924-25)

By local authorities	£ 58,917,696
For London	£ 10,318,929

Elementary Schools in Scotland (1924)

Population : 4,893,032

Institutions 2895. Scholars : 656,000, i.e., 13·4% of the total population.

The Total Elementaries (Great Britain), 1924

5,581,468 + 656,000 = 6,237,468, constituting

$\frac{6,237,468}{43,783,032} \times 100$ %, i.e., 14·2 %, of the total population.

According to Sadler in *Our Public Elementary Schools* the statistics of English elementary schools in 1926 would give the following figures :

More than 6,000,000 boys and girls (each under 14). More than 20,000 schools. More than 200,000 teachers, of whom about ¾ths are women.

Annual Public Expenses : £ 72,000,000 + £ 3,000,000 (?)

School Hygiene in England and Wales (1924-25)

Clinics	1,200
Medical Officers ...	1,844
Dentists	511
Nurses	4,368
Medically Examined Pupils in Elementary Schools	2,420,305

Special Elementary Schools in England and Wales (1924-25)

	Institutions	Accommodation
Blind	72	4,081
Deaf	49	4,574
Defective (mentally)	197	16,746
Defective (physically)	223	17,504
Epileptic	6	525
Total	547	43,430

Special Elementary Schools in Scotland (1924)

31 Schools for defectives	8,147	Scholars
4 for blind		
10 for deaf and mutes	998	„
35 Reformatory and Industrial Schools	2,832	„
Total	11,977	„

Special Elementary Scholars in Great Britain (1924)

England and Wales	43,430
Scotland	11,977
Total	55,407

Secondary Schools in England and Wales

	Total schools	Grant schools	Total pupils	Teachers
1924-25	1,667	1,284	421,688 (221,924 boys) (199,764 girls)	19,069
1926		1,310		

The secondaries (England and Wales), 1924-25, constitute $\frac{421,688}{5,581,468} \times 100\%$, i.e., 7·5% of the primaries.

The secondaries (England and Wales), 1924-25, constitute $\frac{421,688}{38,890,000} \times 100\%$, i.e., 1% of the total population.

Secondary Educational Expenses in England and Wales (1924-25)

By Local Authorities	£ 14,531,328
For London	£ 2,623,914

Secondary Schools in Scotland (1924)

249 Institutions. 179,814 Scholars.

The total secondaries (Great Britain): 421,688 + 479,874 = 601,502, constituting $\frac{601,502}{6,237,468} \times 100\%$, i.e., 9·6% of the primaries.

They likewise constitute $\frac{601,502}{43,783,032} \times 100\%$ i.e., 1·3% of the total population.

Universities in England and Wales (1926-27)

Institutions :	12
Professors :	3,780
Scholars :	43,647

The University scholars (England and Wales), 1926-27, constitute $\frac{43,647}{421,688} \times 100\%$, i.e., 10·3% of the secondaries.

They constitute $\frac{43,647}{38,890,000} \times 100\%$ i.e., ·11% of the total population or 11 for every 10,000.

Universities in Scotland (1926)

Institutions :	4
Professors :	799
Scholars :	10,563

Total University Scholars in Great Britain (1926)

43,647 + 10,563 = 54,210. They constitute $\frac{54,210}{601,502}$ × 100%, i.e., 8·1% of the secondaries, and $\frac{54,210}{43,783,032}$ × 100%, i.e., ·12% of the total population or 12 for every 10,000 persons.

Higher Professional Education in England and Wales (1925)

		Scholars
44 larger Technical Institutes	(advanced)	4,074
95 Day Technical Institutes	(full-time)	9,223
	(part-time)	3,691
	Total	16,988

It is doubtful if the second category should be described as "higher".

The higher professionals constitute $\frac{16,988}{43,647}$ × 100%, i.e., 38·8% of University scholars.

Total Technical Schools in England and Wales (1925)

Higher Professional Institutes, 16,988 Students.
4,147 Schools (part-time technical), 680,943 ,,

		Students
38	Day Continuation Schools	—
89	Junior Technical Schools	11,954
6	Nautical Schools	—
174	Schools of Art	47,663
110	Normal Schools	16,881
	Total	774,429

Technical Schools in Scotland (1924)

Central Institutions :	Day Scholars	6,975
	Other ,,	11,925
946 Continuation Classes :		123,780
	Total	142,680

Total Professionals in Great Britain (1924)

England and Wales	774,429
Scotland	142,680
Total	917,109

The professionals in Great Britain (1924) constitute $\frac{917,109}{43,783,032}$ × 100%, i.e., 2% of the entire population.

Educational Budget in Great Britain

	Total Revenue	Total Expenditure	Educational Grant
1926	£812,061,658	£826,099,778	£45,124,000
1927	£804,700,000	£812,641,000	£46,291,000

Educational expenditure is the highest single item after the expenditures on civil services, post office and navy and more than that on the army.

State Educational Expenses (Great Britain), 1926, constitute $\frac{45,124,000}{826,099,778} \times 100\%$ i.e., 5·4%, of the total public expenditure.

They constitute £$\frac{45,124,000}{43,783,032}$, i.e., £1·6·0 or Rs. 17-5-4 per head of population.

British India*

	Area in sq. miles	Population	Inhabitants per sq. mile
1921	1,094,300	247,097,651	225
	Indian States		
1921	711,032	71,939,187	101
Total India	1,805,332	319,036,838	177

Illiteracy in British India (1921)

	Able to read and write	Unable to read and write	Total population
Males	19,841,438	142,623,691	162,465,129
Females	2,782,213	150,807,889	153,590,102
	22,623,651	293,431,580	316,055,231

N. B. 2,887,249 unrecorded.

Indian Matriculates

About 16 years old = Compulsory-primaries (14 years old) of the "Great Powers".

For India the so-called primary and the so-called secondary scholars together should be regarded as, generally speaking, equivalent to the "primaries" of the other countries.

* *Quinquennial Review of Progress of Education in India* (1917-22); *Indian Education in 1926-27.*

It is to be noted that the secondary schools of India do not as a rule go beyond the 16th year of the scholar and that the elementary schools of the great powers go up to the 14th by compulsion. For the purposes of comparison by the world-standard, therefore, all the Indian elementary and all the Indian secondary schools must be put together in order to constitute a category roughly corresponding to the elementary schools of the great powers.

In regard to the problem of comparison in academic standards one may easily suspect, however, if the 16-year old matriculates of India are not higher in standing than the 14-year old elementaries or "compulsory-primaries" of the great powers. But there are at least three considerations which would not fail to establish a parity or an equalization between the two sets of scholars. First, the compulsory primaries of the great powers learn everything through their mother-tongues whereas in India the so-called secondaries are compelled to learn everything or rather almost everything through a foreign medium. Other circumstances remaining the same, therefore, for the same age-groups, the Indian scholars learn less than their comrades of these nations. In the second place, the teaching in those countries is more efficient, practical, up-to-date and vitalizing than in India. The teachers are better qualified, the schools are more adequately equipped in point of library, laboratory, workshop, museum, etc. and the scholars have chances to go out on excursions, visit places of historical or industrial interest as well

as carry on nature-study in the fields. Finally, school-hygiene is an important item in the pedagogics of the great powers. The clinics, medical advisers, dentists and physical exercise teachers attached to the school-system (cf. Japan and England) exert a powerful influence on the body, mind, *morale* as well as material condition of the academic population. The second and the third items are as yet virtually unknown in India. Altogether then, academically speaking, the 16-year old matriculates of India cannot as a rule be higher than the 14-year old compulsory-primaries of the other countries.

The So-called Elementary Schools in British India (1921)

	Institutions	Scholars
Public	160,070	6,310,400
Private	33,205	596,846
Total	193,275	6,907,246

The So-called Secondary Schools in British India (1921)

	Institutions	Scholars
Public	8,987	1,239,524
Private	1,602	42,279
	10,589	1,281,803

Elementary Education in India by the World-Standard (1921)

So-called Elementary Scholars	6,907,246
„ Secondary „	1,281,803
Total "Elementary"	8,189,049

The So-called Elementary Schools in British India (1924-25)

	Institutions	Scholars
For boys :	150,919	6,451,925
For girls :	24,677	855,337
Total	175,596	7,307,262

The So-called Secondary Schools in British India (1924-25)

	Institutions	Scholars
For Boys :	9,115	1,421,414
For Girls :	934	122,744
	10,049	1,544,158

Elementary Education in British India by the World-Standard (1924-25)

	Institutions	Scholars
So-called Primary Schools	175,596	7,307,262
„ Secondary Schools	10,049	1,544,158
Total	185,645	8,851,420

Elementary Education in British India by the World-Standard (1926-27)

	Institutions	Scholars
So-called Primary Schools	183,164	7,800,000
So-called Secondary Schools	10,837	1,720,000
Total	194,001	9,520,000

The "elementaries" in British India (1926-27) constitute $\frac{9,520,000}{247,097,651} \times 100\%$, i.e., 3·8% of the total population.

cf.	France	9·5%
	Japan	16·7%
	Italy	9·67%
	Germany	14·1%
	Russia	5·3%
	America	19·3%
	Great Britain	14·3%

Indian Graduates, i.e., B. A.'s and B. Sc.'s

about 20-year old = secondaries of the "great powers" (about 18 years old).

In the other countries the category "secondary" comprises scholars between the 14th and the 18th year. At the 18th year Indian scholars, as a rule, finish the Intermediate Arts or Intermediate Science courses. They are already supposed to be belonging to the University as members of the "Colleges". From the

viewpoint of age-groups, therefore, the secondary "school-finals" of the other countries correspond to the Intermediates of India.

And yet this parity or equation can hardly be accepted as valid. Here, again, as in the case of the "compulsory-elementaries" *vs.* matriculates, the problem of academic standing has to be discussed with reference to the efficiency of teaching, depending as it does on several factors bearing on the educational system.

Without going into the merits of individual differentiation in intelligence one will have to admit that the absence of adequate facilities and opportunities to which the pedagogic world is used in other countries compels the 18-year old Intermediates of India to remain far behind their age-comrades, the secondaries, of the great powers in regard to mental outfit and socio-moral technique.

It is not easy, however, to point exactly to the age-group in India with which it would be possible to establish the scientific equation of the 18-year old secondaries of the other countries. Perhaps one would not be very far off the mark if one were to establish an equation, in general terms, between them and the 20-year old scholars (i.e., B.A.'s and B.Sc.'s) of Indian Colleges. In other words, practically every so-called College of India is nothing but a "secondary" or a "high" school of the great powers. Only those institutions which accept exclusively the so-called "post-graduate" scholars as students will be outside this category of secondary education. From the standpoint of pedagogic values the B.A. and B.Sc, i.e., the "graduation" candidates of Indian "universities" are to be treated as being on a par with the secondaries or high-school passed scholars of the other countries.

Secondary Education in India by the World-Standard (1921-22)

So-called Colleges :
(I.A., I.Sc., B.A., B. Sc. Colleges)

	Institutions	Scholars
For men :	152	44,670
For women :	15	1,263
Total	167	45,933

It is to be noted that among these scholars those who are so-called "post-graduate" students should really be regarded as post-secondary.

Secondary Education in British India So-called Colleges (1924-25)

	Institutions	Scholars
For Men :	169	61,343
For Women :	16	1,200
Total	185	62,543

Secondary Education in India So-called Colleges (1926-27)

Institutions	Scholars
303	70,000

The secondaries in India (i.e., the so-called college students or I.A., I.Sc., B. A. and B. Sc. candidates), 1926-27, constitute $\frac{79,000}{9,520,000} \times 100\%$, i.e., ·73% of the primaries.

cf.	France	4·5%
	Japan	4·8%
	Italy	4 %
	Germany	8·4%
	Russia	9·5%
	America	16·5%
	Great Britain	9·6%

The secondaries in India (i.e., the so-called College students, or I. A., I. Sc., B. A. and B. Sc. candidates), 1926-27, constitute $\frac{70,800}{247,097,651} \times 100\%$, i.e., ·028% of the total population.

cf.	France	·4%
	Japan	·7%
	Italy	·35%
	Germany	1·1%
	Russia	·5%
	America	3·2%
	Great Britain	1·3%

Indian Post-Graduate (i.e., M. A. and M. Sc.) Students

generally 22 years old = Under-graduates of the great powers.

For all practical purposes, the B. A. and B. Sc. "Colleges" constitute the highest rung of the educational system in India. The backbone of so-called "University" life is formed by them. The post-B. A. and post-B.Sc. (i.e., the so-called post-graduate) Colleges and scholars are few and far between, to be met with in the metropolitan cities only.

With a view to comparison by the world-standard it is necessary to remember that it is the post-secondary or post-high-school scholars that constitute the Universities of great powers. And since the backbone of the so-called Indian Universities is formed by Colleges and scholars that have been treated for the purpose of this study as nothing but secondary, very little of "real University" education of the "great power" standard may be said to exist in India.*

The M. A. and M. Sc. students of the Indian Colleges and Universities require, however, to be appraised at their proper academic worth. Undoubtedly, they belong to the real University group. But they must not be treated as post-graduates, as is the custom to treat them in India. They cannot be regarded as anything higher than undergraduates, as is their real standing judged by the systems of the great powers.

It is necessary to analyze the worth of the Indian M. A.'s and M. Sc.'s still more intensively. The under-

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* Sarkar : *The Post-Graduate University at Calcutta (1929).*

graduates, the high-school-passed scholars or secondaries of the great powers are generally in attendance at the Universities for not less than 3 or 4 years. In Germany the period has been fixed at 5 years in 1926. But their intellectual equals in India, the B. A.'s and B. Sc.'s finish their University life in 2 years only. Besides, the number of hours per year spent by the students of the great powers as members of the University is much larger than that required of "post-graduate" students in India. Add to this the comparative inefficiency of teaching and inadequacy of equipment and other short-comings such as characterize the so-called post-graduate departments of Indian Colleges and Universities and one realizes how far short of "real University" education, the M.A.'s and M.Sc.'s, although officially the highest intellectuals of India, fall both in time and quality.

Unless arrangements be made for taking post-M.A. and post-M.Sc. scholars through a further period of tuition for about 2 years, i.e., unless the Indian post-graduate departments be run for regular schooling for at least 4 years, they can hardly rise to the level of Universities of the great powers. It is understood, of course, that the proportion of more competent and creative teachers on the University staff as well as the supply of facilities for enabling them to function in a growingly competent and creative manner will have to be assured by a genuinely academic orientation to University interests together with a liberal provision of the "sinews of war."

Universities in India by the World-Standard

Only the post-graduate departments of Colleges and Universities are to be counted here. And yet they do not offer the full 3-4-5 year course as is the custom in the other countries. Be this as it may, the total for all India is small.

Post-Graduates (i.e., real University scholars) in India (1925):

Arts	5,962
Sciences	1,424
Total	7,386

The University scholars in British India (1925) constitute $\frac{7,386}{70,000} \times 100\%$, i.e., 10·5 % of the secondaries (1926-27).

cf.	France	30%
	Japan	8%
	Italy	19%
	Germany	9·7%
	Russia	9·7%
	America	17%
	Great Britain	8·1%

The University scholars (Post-Graduates) in British India (1925) constitute $\frac{7,386}{246,097,651} \times 100\ \%$, i.e., ·0029% of the total population, i.e., 29 for every 1,000,000.

		for every 10,000
cf.	France	13
	Japan	5·8
	Italy	7·5
	Germany	11
	Russia	5
	America	57
	Great Britain	12

A Fallacy in Comparative Statistics

The official *Statement* exhibiting the "moral and material progress and condition of India" (during the year 1926-27), published by His Majesty's Stationery Office, London, 1928, makes the following observation at p. 315 : "The situation among the middle classes is as encouraging as that among the poorer classes is discouraging. Secondary and University education are not only in a stronger position (as against 183,164 primary schools in 1926 there were 10,837 secondary schools and 303 colleges) but compare very favourably with countries much more advanced than India."

Nothing could be more erroneous and misleading than this view regarding the actual educational condition of India. The fallacy arises, first, from an uncritical use of the words, "middle classes" and "poorer classes." Secondly, "countries much more advanced than India" are referred to vaguely, without any name and in a manner that exhibits in difference to comparative statistics. Finally, and this is more to the point in the present instance, the *Statement* employs the

categories, college, secondary and primary, prevalent in the educational world, but does not understand that the one and the same category may and does imply altogether different and diverse contents, meanings or values.

The words, colleges, secondary and primary, are eminently misleading. In the first place, one has to take note of the age-groups. But the age-grouping itself is not enough. In the second place, therefore, the content and worth of the schooling for each age-group has to be analyzed. An examination of the age-groups together with the analysis of real academic standing of schools and scholars will demonstrate that it is a serious scientific blunder to establish the following three sociological parities or equations :

1. Primary schools of India = primary schools of the "much more advanced" countries.
2. Secondary schools of India = secondary schools of the "much more advanced" countries.
3. Colleges of India = colleges of the "much more advanced" countries.

In reality, what pass for secondary schools in India are not higher than the primary schools of the "much more advanced countries." The so-called Colleges of India correspond in the main but to so many high schools of those countries.

Genuine "collegiate", University or higher education of the type to which those countries are used exists in India in trivial proportions. The sooner all these hard facts are realized in India not only by the Government

but also and especially by the people the sooner will the way to educational reform be facilitated or at any rate the seriousness of the situation brought home to the well-wishers of the country.

Professional Education in India (1921-22)

Law and medicine constitute the two leading limbs of professional education in India. Engineering as well as other industrial and commercial schools that constitute the characteristic feature of professional education in the great powers, have hardly acquired any prominence in the Indian pedagogic system. In any case, the standard is quite modest. It is doubtful if any of the institutions that exist reach even in certain sections the highest level such as is represented by the *Conservatoire* of Paris, the *Hochschulen* of Germany, and the larger Technical Institutes of Great Britain.

In the main, therefore, it may be asserted that "higher" technical and professional institutions do not exist in India. All the institutions of the Indian system belong to the intermediate and "lower" rungs of the great power standard.

(*a*) *Professional Colleges in India (1921-22)*

Institutions	64
Scholars	13,662

(*b*) *Lower Professional Education in India (1921-22)*

	Institutions	Scholars
1. Training Schools	1,072	26,931
2. Other Special Schools	2,939	105,775
Total	4,011	132,706

N.B. No. 2 can hardly be described as really professional.

(*c*) *Total Professionals in British India (1921-22)*

	13,662
	26,931
Total	40,593

They constitute $\frac{40,593}{247,097,651} \times 100\%$, i.e., ·016% of the total population.

cf.	Japan	1·6 %
	Germany	1·2 %
	Russia	·38%
	America	·61%
	Great Britain	2%

Professional and Technical Education in India (1924)

(a) "Colleges"	Institutions	Scholars
1. Law	11	7,227
2. Medicine	8	3,873
3. Teaching	22	991
4. Engineering	6	1,486
3. Agriculture	5	567
6. Commerce	10	1,330
7. Forestry	2	169
8. Veterinary	3	292
Total	67	15,935

Professional and Technical Education in India (1924)

(*b*) Schools	Institutions	Scholars
1. Arts	9	1,711
2. Law	2	124
3. Medical	26	4,761
4. Normal	798	21,332
5. Engineering	12	1,224
6. Technical and Industrial	316	14,483
7. Commerce	131	7,401
8. Agriculture	15	381
9. Reformatory	8	1,190
10. Defectives	28	687
11. Adults	2,816	70,340
12. Other	2,456	83,606
Total	6,617	207,240

N. B. Nos. 11 and 12, i.e., 153,946 scholars should hardly be regarded as belonging to the professional group, and, therefore, the number should be deducted from the total. In other words, only 53,314 scholars belong to the lower professional schools.

Total Professionals in British India (1924)

1. Colleges	67	15,935	Scholars	
2. Schools	6,617	207,260		
Total	6,684	223,195	,,	
N.B. From 2 (Schools), deduct	5,272	153,946		
Total	1,412	69,249		

The scholars constitute $\frac{69,249}{247,097,651} \times 100\%$, i.e., ·027% of the total population.

cf.

Japan	1·6 %
Germany	1·2 %
America	·61 %
Russia	·38 %
Great Britain	2 %

State Expenses on Education in British India (1921-22)

From Provincial Revenues	Rs.	9,02,30,028
From Municipal Funds	Rs.	79,05,063
From Local Funds	Rs.	1,68,26,087
Total	Rs.	11,49,61,178

For 1926-27 the total is Rs. 12,50,00,000

State expenses in British India (1926-27) constitute

Rs. $\frac{12,50,00,000}{247,097,651}$, i.e., Rs. 0-8-0 per head of population.

cf.	France	Rs. 5-5-3
	Japan	,, 2-4-3
	Italy	,, 4-0-0
	Germany	,, 17-9-0
	Russia	,, 0-12-9
	America	,, 29-6-4
	Great Britain	,, 17-5-4

Total Educational Expenditure on "Recognized" Schools in British India

From fees, provincial resources, local rates, municipal funds, endowments, etc.

1919-20	Rs. 14,88,96,960
1924-25	Rs. 20,87,48,319

Educational and Cultural Life in British India (1924-25)

Newspapers and Periodicals :

Madras	597
Bombay	816
Bengal	632
U. P.	580
Punjab	390

Burma	139
Bihar & Orisa	117
C. P.	68
Assam	35
Delhi	75
Total	3,449

Printing Presses	5,312
Books (in English and other European languages)	2,302
,, Indian languages	14,728

Bengal (British)*

	Area in sq. miles	Population	Inhabitants per sq. mile
1921	76,843	46,695,536	608
	Bengal States		
1921	5,434	896,926	165

Elementary Education in Bengal by the World-Standard (1921-22)

	Institutions	Scholars
Public primary	47,783	1,435,906
Private ,,	1,840	55,437
So-called Secondary	2,678	328,166
Total	52,301	1,819,509

Elementaries in Bengal by the World Standard (1926-27)

		Institutions	Scholars
1.	So-called Primary for boys	37,221	1,333,674
	for girls	13,822	341,601
2.	,, Middle for boys	1,670	144,109
	for girls	76	8,991

* *Report on Public Instruction in Bengal* for 1926-27; *Quinquennial Review of Education in Bengal* (Government Publications).

		Institutions	Scholars
3.	So-called High for boys	998	255,851
	for girls	39	8,861
	Total	53,826	2,093,087

The elementaries (Bengal), 1926-27, constitute $\frac{2,093,087}{46,695,536} \times 100\%$, i.e., 4·4% of the total population.

cf. France	9·5%
Japan	16·7%
Italy	9·67%
Germany	14·1%
Russia	5·3%
America	19·3%
Great Britain	14·3%
British India	3·8%

Secondary Education in Bengal by the World-Standard (1921-22)

	Institutions	Scholars
So-called Colleges	36	16,942

Secondaries in Bengal by the World-Standard (1926-27)

So-called Colleges (men)	38	24,122
,, ,, (women)	4	301
Total	42	24,423

The secondaries in Bengal, 1926-27, constitute $\frac{24,423}{2,093,087} \times 100\%$, i.e., 1·1% of the primaries.

cf.	France	4·5%
	Japan	4·8%
	Italy	4%
	Germany	8·4%
	Russia	9·5%
	America	16·5%
	Great Britain	9·6%
	British India	·73%

They constitute likewise $\frac{24,423}{46,695,536} \times 100\%$, i.e., ·05% of the total population.

cf.	France	·4 %
	Japan	·7 %
	Italy	·35%
	Germany	1·1 %
	Russia	· 5%
	America	3· 2%
	Great Britain	1· 3%
	British India	·028%

University Education in Bengal by the World-Standard (1921-22)

	Institutions		Scholars
Post-Graduate Departments	1	(Calcutta)	1,062
	1	(Dacca)	625
Total	2		1,687

Universities in Bengal by the World-Standard (1926-27)

Institutions	2
Scholars	1,621

The University scholars in Bengal, 1926-27, constitute $\frac{1,621}{24,423} \times 100\%$, i.e., 6·6% of the secondaries.

cf.	France	30%
	Japan	8 %
	Italy	19%
	Germany	9·7%
	Russia	9·7%
	America	17%
	Great Britain	8·1%
	British India	10·5%

University scholars in Bengal, 1926-27, constitute $\frac{1,621}{46,695,536} \times 100\%$, i.e., ·0035%, of the total population i.e., 35 for every 10,000.

cf.	France	13	for every 10,000
	Japan	5·8	,,
	Italy	7·5	,,
	Germany	11	,,
	Russia	5	,,
	America	57	,,
	Great Britain	12	,,
	British India	·29	,,

Professional Education in Bengal (1921-22)

		Institutions	Scholars
1.	So-called Colleges:	10	4,653
2.	Special Schools:	1,420	49,350
	Total	1,430	54,003

N.B. Very many of the second count can hardly be described as professional.

Professional and Technical Education in Bengal (1925)

(a) "Colleges"

		Institutions	Scholars
1.	Law	3	3,634
2.	Medicine	3	1,682
3.	Education	5	107
4.	Engineering	1	321
5.	Agriculture	0	0
6.	Commerce	5	624
7.	Forestry	0	0
8.	Veterinary	1	132
	Total	18	6,500

Professional and Technical Education in Bengal (1925)

(b) "Schools"

1.	Art	5	564
2.	Law	0	0

3.	Medical	8	1,851
4.	Normal	115	2,136
5.	Engineering	3	574
6.	Technical and Industrial	135	4,968
7.	Commercial	27	1,430
8.	Agriculture	4	83
9.	Reformatory	0	0
10.	Defectives	7	210
11.	Adults	1,345	25,860
12.	Other	1.043	53,375
	Total	2,692	91,051
	Deduct 11 and 12 as not really professional	2,388	79,233
	Total	304	11,816

Total Professionals in Bengal (1925)

1.	"Colleges"	18	6,500
2.	"Schools"	304	11,816
	Total	322	18,316

The professionals in Bengal, 1925, constitute $\frac{18,316}{46,695,536} \times 100\%$, i.e., ·03% of the total population or 3 for every 10,000.

cf.	Japan	160 for every	10,000
	Germany	120 „ „	„
	Russia	38 „ „	„
	America	61 „ „	„
	Great Britain	200 „ „	„
	British India	2·7 „ „	„

State Expenses on Education in Bengal (1927-28)

Total Public Revenue of the

	Govt. of Bengal	Rs.	13,45,43,000
„ „	Expenditure	„ „	11,10,79,000
„ „	Educational Expenditure	„	1,26,11,000

Educational expenditure is the greatest single item after the public charge *re.* the police.

The above figures would seem to indicate that public educational expenses in Bengal constitute $\frac{1,26,11,000}{11,10,79,000} \times 100\%$, i.e., 11·3% of the total public expenditure.

But the situation is not so glorious. The figure Rs. 11,10,79,000 does not represent the total public expenditure of Bengal.

The above calculation *re.* the percentage of educational expenses in reference to total public expenditure is fundamentally wrong. It is necessary to add the Bengal share of Imperial Government expenses in

order to get the accurate figure. The calculation may be made in the following manner. Find out the total Imperial expenditure which for 1927-28 is Rs. 125,25,65,000.

Every Bengali "as Indian" then spends Rs. $\frac{125,25,65,000}{24,70,97,651}$,

i. e., Rs. 5-0-0 per head (1927-28).

Besides, every Bengali "as Bengali" spends Rs. $\frac{11,10,79,000}{4,66,95,536}$, i.e., Rs. 2-4-9 per head.

Total public expenditure of Bengalis per head is therefore Rs. 7-4-9 (1927-28).

"Total" Expenses on Education in Bengal (1921-22)

Provincial	Rs.	1,35,45,045
Local Board	„	14,11,184
Municipal	„	2,42,713
Total	Rs.	1,51,98,942
Fees :	Rs.	1,28,33,684
Other sources :	Rs.	53,54,480
Total	Rs.	1,81,88,164

Expenses are thus met more from private than from "Government" sources.

"Total" Expenses on Education in Bengal (1926-27)

Total Rs. 3,77,00,000.
38% Government fund
5%. District and Municipal funds
41 % fees
16% other sources.

State Expenditure on Education in Bengal (1926-27)

Rs. 1,62,11,00.

State expenses on education in Bengal, 1926-27, constitute Rs. $\frac{1,62,11,000}{4,66,95,536}$, i.e., R. 0-5-6 per head of population.

cf.	France	Rs. 5-5-3
	Japan	,, 2-4-3
	Italy	,, 4-0-0
	Germany	,, 17-9-0
	Russia	,, 0-12-9
	America	,, 29-6-4
	Great Britain	,, 17-5-4
	British India	,, 0-8-0

Total public expenditure per head in Bengal is Rs. 7-4-9 (1927-28).

Public educational expenditure per head in Bengal is 0-5-6 (1926-27).

Therefore State expenses in Bengal on education constitute $\frac{0\text{-}5\text{-}6}{7\text{-}4\text{-}9} \times 100\%$, i.e., 4·7% of the total (Imperial and Provincial) expenditure.

cf.	France	5 %
	Japan	9·6%
	Italy	7·6%
	Russia	3·8%.
	Great Britain	5·4%

National Wealth And Income

Educational finance has been taken into consideration with regard to each of the countries investigated above. The sole exception is Germany. While educational expenditure of the state, central, local or municipal, is no doubt an objective index * to individual or collective efficiency it should be remembered that the educational budget or, for that matter, the entire public finance of a people represents invariably a more or less fixed proportion of the national wealth or rather of the national income at given periods. The educational institutions of a country require therefore to be studied in the background not only of its taxable capacity, but of its total wealth and income as well. Comparative pedagogics cannot help us far unless it be exhibited in the perspective of comparative economics. In terms of concrete realities, one does not need much logic to be convinced that as long as a country is poor, its educational institutions cannot prosper. In order that educational finance may be respectable in figures, the national wealth has to be decent in dimensions.

For the purposes of the present study in the efficiency of nations and the examination of Bengal

* The limitations of such indices must always be admitted, however. See the chapter, "Interpretation of Statistical Data," note, p. 100.

or of India by the world-standard it is desirable, therefore, to collect the statistics of wealth and income from the different regions under survey. For France the best available material on the subject is to be found in *La Richesse de la France devant la Guerre* (The Wealth of France Facing the War) by Rene Pupin of the *Societe d'Economie Politique de Paris*, 1916. In regard to Italy, there are two calculations by Corrado Gini, one for 1908 and the other for 1914. *Deutschlands Volkswohlstand, 1888-1913* (Germany's National Prosperity, 1888-1913) by Karl Helfferich, Director of the *Deutsche Bank*, published in 1913, is a prominent source for Germany. King's *Wealth and Income of the People of the United States (1850-1904)*, is a well-known private authority. Besides, the *Census* of American wealth conducted every ten years since 1850 by the Bureau at Washington, D. C., has an official importance. Stamp's *British Income and Property* (1916) is the standard work on Great Britain. His paper on "The Wealth and Income of the Chief Powers" published in the *Journal of the Royal Statistical Society* (July, 1919) discusses Great Britain, the U. S. A., Germany, France, Italy, Spain, Holland, Sweden, Belgium, Norway, Denmark, Switzerland, Russia, Turkey, Greece, Australia, Canada, Japan and the Argentine Republic. A more recent publication dealing with the wealth statistics of several countries is *The Inter-Ally Debts* (1924) by Harvey Fisk of the Bankers Trust Company, New York. In 1928 the Japanese Bureau of Statistics has published the

figures relating to the national wealth of Japan at the end of 1925. The present study is based on the figures furnished by Fisk as well as to a certain extent on the chapters, "La posizione economica internazionale dell'Italia" and "La ricchezza nazionale, il reddito nazionale e la pressione tributaria," in *Movimento Economico dell'Italia, 1928* (published by the Banca Commerciale Italiana, Milan).

For purposes of comparative statistics both the pre-war (1913) and the post-war (1923) currencies have been brought down to a common denominator, the Rupee basis. There is not much theoretical difficulty about these conversions so far as 1913 is concerned. But the Rupee equivalents of the 1923 currencies would fail to indicate the real values; because the varying degrees and modes of inflation and manipulation have affected the purchasing power of the currencies diversely. It is advisable, therefore, to reduce the 1923 currencies to the 1913 basis.

The process involved is simple. First, all foreign currencies (1923) are turned into the U. S. dollars at par of exchange (£1 = $ 4.866; Mark = 23.8 cents; franc = 19.3 cents; Yen = 4.80 cents; rouble = 51. 46 cents).

Secondly, divide these dollar-exchanges of 1923 by the wholesale price index-number of the different countries in order to get the 1913 dollars, i.e., dollars of the 1913 purchasing power.

Thirdly, multiply the "1913 dollars" by 3 in order to get the Rupee equivalents.

The dollar (1913) is taken to be equivalent to Rs. 3 for the present calculation in order to get round figures.

It is to be understood that the calculations of Stamp, Helfferich, Gini and others as well as of the Bankers Trust Co., New York, have attempted only approximate results and are based very often on guess-work. The few pies(12 or 18) left out of each dollar would not therefore gravely affect the total values of wealth and income. Since 1926, of course, the dollar has been equivalent to about Rs. 2-12-0 only (Re = 18 pence).

National Wealth (in 1913 *Rupees)* 1914

	Population (in millions)	Total Amount (in millions)	Per Capita
U. S. A.	98	Rs. 600,000	Rs. 6,183
France	40	Rs. 173,700	Rs. 4,341
Germany	68	Rs. 241,500	Rs. 3,549
Great Britain	46	Rs. 210,000	Rs. 4,563
Italy	36	Rs. 65,400	Rs. 1,815
Japan	53	Rs. 34,950	Rs. 660
Russia	174	Rs. 175,200	Rs. 1,005
British India	244	Rs. 90,000	Rs. 366

National Income (in 1913 *Rupees)* 1914

	Population (in millions)	Total Amount (in millions)	Per Capita
America	98	Rs. 103,200	Rs. 1,053
France	40	Rs. 21,900	Rs. 546

	Population (in millions)	Total Amount (in millions)	Per Capita.
Germany	68	Rs. 31,500	Rs. 462
Great Britain	46	Rs. 32,700	Rs. 708
Italy	36	Rs. 11,700	Rs. 324
Japan	53	Rs. 4,800	Rs. 90
Russia	174	Rs. 22,500	Rs. 129
British India	244	Rs. 9,000	Rs. 36

National Wealth (in 1913 *Rupees)* 1923

	Population (in millions)	Total Amount (in millions)	Per Capita.
America	110	Rs. 690,000	Rs. 6,270
France	39	Rs. 173,700	Rs. 4,452
Germany	61	Rs. 165,000	Rs. 2,703
Great Britain	47	Rs. 210,000	Rs. 4,467
Italy	40	Rs. 63,750	Rs. 1,593
Japan	56	Rs. 45,000	Rs. 801
Russia	132	Rs. 135,000	Rs. 1,020
British India	247	Rs. 105,000	Rs. 423

National Income (in 1913 *Rupees)* 1923

	Population (in millions)	Total Amount (in millions)	Per Capita
America	110	Rs. 93,000	Rs. 843
France	39	Rs. 21,000	Rs. 537
Germany	61	Rs. 21,000	Rs. 342
Great Britain	47	Rs. 30,000	Rs. 636
Italy	40	Rs. 10,200	Rs. 255

	Population (in millions)	Total Amount (in millions)	Per Capita
Japan	56	Rs. 6,000	Rs. 105
Russia	132	Rs. 16,800	Rs. 126
British India	247	Rs. 10,500	Rs. 42

Bengal in World Pedagogics

1. *Bengal in the Scale of Population*

1.	British India	...	247,097,651 (1921)
2.	Soviet Russia	...	139,753,000 (1925)
3.	U. S. A	...	115,378,000 (1925)
4.	Germany	...	63,118,782 (1925)
5.	Japan	...	59,736,822 (1925)
6.	Bengal	...	46,695,536 (1921)
7.	Great Britain	...	43,783,032 (1925)
8.	France	...	40,743,851 (1926)
9.	Italy	...	40,548,683 (1926)

2. *Bengal in the Scale of Primary Education*

Percentage of total population in primary schools

1.	U. S. A.	...	19.3 (1924)
2.	Japan	...	16.7 (1922-23)
3.	Great Britain	...	14.1 (1925)
4.	Germany	...	14.1 (1922)
5.	Italy	...	9.67 (1922-23)
6.	France	...	9.5 (1924-25)
7.	Soviet Russia	...	5.3 (1924)
8.	Bengal	...	4.4 (1926-27)
9.	British India	...	3.8 (1926-27)

3. *Bengal in the Scale of Secondary Education*

Percentage of the total population in secondary schools

1.	U. S A.	...	3.2 (1924)
2.	Great Britain	...	1.3 (1924)
3.	Germany	...	1.1 (1922)
4.	Japan	...	.7 (1922-23)
5.	Soviet Russia	...	.5 (1924)
6.	France	...	.4 (1924-25)
7.	Italy	...	.35 (1922-23)
8.	Bengal	...	.05 (1926-27)
9.	British India	...	.028 (1926-27)

4. *Bengal in the Scale of "Post-Graduate" (University) Education*

Per 10,000 of total population in "post-graduate" colleges.

1.	U. S. A.	...	57 (1924)
2.	France	...	13 (1925)
3.	Great Britain	...	12 (1926)
4.	Germany	...	11 (1925)
5.	Italy	...	7.5 (1924-25)
6.	Japan	...	5.8 (1922-23)
7.	Soviet Russia	...	5 (1924)
8.	Bengal	...	.35 (1926-27)
9.	British India	...	.29 (1925)

5. *Bengal in the Scale of Professional and Technical Education*

Per 10,000 of population in the professional and technical schools

1.	Great Britain	200	(1924)
2.	Japan	160	(1922-23)
3.	Germany	120	(1925)
4.	U. S. A.	61	(1924)
5.	Soviet Russia	38	(1924)
6.	Bengal	3	(1925)
7.	British India	2.7	(1924)

6. *Bengal in the Scale of Public Educational Expenditure*

Percentage of total public expenditure as public expenditure on education

1.	Japan	9.6	(1927)
2.	Italy	7.6	(1927)
3.	Great Britain	5.4	(1926)
4.	France	5	(1927)
5.	Bengal	4.7	(1926-27)
6.	Soviet Russia	3.8	(1924)

7. *Bengal in the Scale of per capita Public Expenditure on Education*

Spent per head of total population per year out of public revenues

		Rs. as. p.	
1.	U.S.A.	29-6-4	(1920)
2.	Germany	17-9-0	(1925-26)

		Rs. as. p.	
3.	Great Britain	17-5-4	(1926)
4.	France	5-5-3	(1927)
5.	Italy	4-0-0	(1927)
6.	Japan	2-4-3	(1927)
7.	Soviet Russia	0-12-9	(1924)
8.	British India	0-8-0	(1926-27)
9.	Bengal	0-5-6	(1926-27)

Comparative Population

Country	1. Population	2. Primary students as per cent. of population	3. Secondary students as per cent. of population
France	40,743,851 (1926)	9·5%	·4%
Japan	59,736,822 (1925)	16·7%	·7%
Italy	40,548,683 (1926)	9·67%	·35%
Germany	63,118,782 (1925)	14·1%	1·1%
Soviet Russia	139,753,900 (1925)	5·3%	·5%
U. S. A.	115,378,000 (1925)	19·3%	3·2%
Great Britain	43,783,032 (1925)	14·3%	1·3%
British India	247,097,651 (1921)	3·8%	·028%
Bengal	46,695,536 (1921)	4·4%	·05%

Pedagogics and Public Finance

4. University or postgraduate students per 10,000 of Population	5. Professional and technical scholars per 10,000 of population	6. Public Educational expenditure per cent. of total public expenditure per year	7. Public Educational expenditure per head of total population per year	8. "Income" per head of population per year
			Rs. as. p.	Rs.
13	×	5%	5 5 3	538
5·8	160	9·6%	2 4 3	107
7·5	×	7·6%	4 0 0	255
11	120	×	17 9 0	344
5	38	3·8%	0 12 9	126
57	61	×	29 6 4	845
12	200	5·4%	17 5 4	638
·29	2·7	×	0 8 0	42
·35	3	4·7%	0 5 6	×

Interpretation of Statistical Data

It has to be observed that there are certain limitations which militate against the scientific precision of the foregoing comparative survey. In the first place, the dates are not uniform in regard to the regions or to the items considered. For instance, an item such as University education which has reference, say, to 1926-27, has been placed in a proportional relation to population obtaining, say, in 1921. Such discrepancies are often to be met with not only between item and item but also between country and country. In the second place, the item, professional and technical education, is incomplete both in point of actual figures as well as of the academic standard. Thirdly, each of the four categories, primary, secondary, University and professional, denotes different things in different countries. For the purpose of the present examination the categories have been as far as possible brought down to a common denominator. The standardization that has been thus effected is responsible for the difference that is to be noticed between the official figures for the different countries and the figures worked up or adjusted for the present study. Finally, the figures for *per capita* income are nothing but approximate estimates.

So far as the interpretation of the statistics, especially of the percentages, is concerned, it would be necessary to practise caution in certain important particulars. In the first place, the proportion or coefficient between secondaries and primaries, or University scholars and secondaries, i.e. between any two consecutive categories, is no doubt interesting in itself. But from the standpoint of national efficiency the most significant ratio is likely to be found in the relation between each category and the entire population. It has been sought therefore to exhibit each one of the items as *per capita* of the people.

In Bengal, for instance, "University scholars" constitute 6·6% of the "secondaries." The coefficient seems to be very near that for Germany where the percentage is 9.7, and indeed nearer to that in Great Britain with 8.1%. These percentages might easily mislead anybody. But the absurdity is quite at hand. The corrective can be furnished easily when one realizes, for instance, that in Germany out of every 10,000 persons 11 men and women are members of the Universities whereas the figure for Bengal is only .35. In other words, for every 1,000,000 men and women, there are roughly speaking only 35 University students in Bengal but there are 1,100 in Germany.

In so far, therefore, as efficiency is a function of University education, we get, other circumstances remaining the same, the following sociological equation or parity* :

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* See the chapter on "Socio-philosophical Equations" in Sarkar : *Political Philosophies Since 1905* (Madras, 1928).

31 Bengalis = 1 German.

That is, man for man, Germany is 31 times as efficient as Bengal. This equation is of course subject to the limitations to which all societal comparisons are liable, because mathematical precision is here sought to be injected into the atmosphere of rather inexact magnitudes, such as human phenomena are by nature*.

In any case, it is clear that not any and every set of coefficients, ratios or percentages can serve as a good index-number in the examination of efficiency. In the present instance, the orientation of 6.6 to 9.7 has to stand competition with the situation 1 : 31.

* It may be observed incidentally that even in more exactly measurable magnitudes, for instance, the prices and wages, the comparability of index numbers between different regions or in the same region between distant periods of time, even when the figures are accurate and complete, is almost invariably liable to be vitiated, if we are interested in the *real* as distinguished from the *nominal* economic values, on account of the diversities in the articles of consumption, general standard of living, social customs, trend of fashion, etc., such as influence the proportional importance or "weight" of the several items in relation to one another. The fundamental short-comings of all international statistics and societal equations, whether economic or non-economic, are never to be overlooked.

The second comparison is weighty, the first almost meaningless.

In the second place, the sociological equations or parities based on the *per capita* efficiency of nations exhibit some very noteworthy peculiarities. Thus, from the standpoint of primary education,

(1) France (with 9.5%) = almost Italy (with 9. 67%). Man for man, the efficiency of France = that of Italy.

(2) Germany (with 14.1%) = Great Britain (with 14.3%). Man for man, the efficiency of Germany = that of Great Britain.

(3) U. S. A. (with 19.3%) = almost 2 France or 2 Italy. Man for man, the efficiency of the U. S. A. = double that of France or Italy.

1 American = 2 Frenchmen = 2 Italians.

In regard to secondary education, some of the equations are given below :—

(1) Italy (·35%) = almost France (.4%).

(2) Germany (1.1%) = almost Great Britain (1.3%).

(3) U. S. A. (3. 2%) = 8 France or almost 3 Germany.

It is interesting to note, in connection with University education, that

Germany (11) = almost Great Britain (12).

We need not go into further details regarding these equations. But we can notice that leaving aside professional and technical education, on which the data are incomplete for the purposes of genuine

comparative study, we have the following significant results :—

(1) Germany is on all three fronts a hair's breadth behind Great Britain, but in reality they are at par. The equality between Germany and Great Britain is manifest in *per capita* public expenditure on education also (Rs. 17-9-0 and Rs. 17-5-4).

(2) France and Italy are likewise almost at the same level in regard to the primaries and the secondaries. But so far as University education is concerned, French efficiency (13) is almost double that of Italy (7.5).

(3) The United States is on all three counts way above the British-German level and indeed towers above all the rest into solitary greatness.

What are the coefficients of Japanese efficiency ? The following equations will indicate the different comparative levels :—

Japan = almost 1-1/8 Germany or 1-1/8 Great Britain (in primary education)
= 2 Italy (in secondary education)
= almost 1/2 Great Britain, or 1/2 Germany (in University education).
= almost Russia (,,)

The curve of Japanese growth is very jagged. Its elevations and depressions are in sharp contrast with the uniform and smooth level of American or British-German achievements in efficiency. At one point Japan comes down to the Russian nadir, but at another

point she rises above Germany and Great Britain, challenging competition even with the U.S.A.

In the third place, we arrive at the conclusion that there is no such thing as the "great power" standard in efficiency. The seven great powers cannot be described as all belonging to one and the same group. There are great powers and great powers. A people can still be a great power although not more than 5 (as in Russia) or 5.8 (as in Japan) or 7.5 (as in Italy out of every 10,000 persons are post-graduate students. Similarly, in order to be a great power, a people does not have invariably to spend Rs. 29-6-4 (as in the U.S.A.) or Rs. 17-9-0 (as in Germany) or Rs. 17-5-4 (as in Great Britain) per head of population on educational matters. It is possible to rise to the great-power level if the people can afford to spend only Rs. 4-0-0 (as in Italy) or even Rs. 2-4-3 (as in Japan) per head.*

The position of Bengal or of all India in the comparative scale of efficiency is not much above what may be described as the "culture-line," to coin an expression akin to the poverty-line. Historically speaking, the statistics would indicate that we happen

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* This should indeed follow deductively from the fundamental limitations in the comparability of monetary index-numbers (prices, wages, incomes, etc.) between different nations or between different epochs. International statistics, however precise and faultless in data, cannot be depended on as the exclusive key to the comparative efficiency of peoples.

to find ourselves today on the different fronts at points where perhaps the great powers were previous to 1875, say, somewhere between 1832 and 1870. It is unnecessary to look back just now and indicate the exact dates at which Great Britain, Germany, France, Italy or Japan registered for themselves the percentages or ratios that mark the Bengali or Indian efficiency of the post-war decade (1919-1928).* Comparative statistics is dynamic enough to enable us to look forward and counsel us to attempt catching up to the next higher co-efficients in the scale of nations.

It is self-evident that for Bengal today in the attempt to rise up to the great-power standard it would be but crying for the moon if we were to be fired by the ambition to reach the American, British or German level. For quite a long time yet Bengal's place in the sun can be captured only by those who meditate on and strenuously work for the Japanese, Italian, nay, Russian coefficients.

If India is to function seriously as an efficient limb of the British Empire in inter-imperial as well as international concerns such as have grown into the prominent functions of daily world culture, the question of

* For illustrations of equation in historical statistics see Sarkar: *The Pressure of Labour upon Constitution and Law (1776-1928)*, Benares, 1928, and "Bengali Banking in Comparative Bank Statistics" in the *Journal of the Bengal National Chamber of Commerce* for September, 1928.

raising Calcutta and Bombay to a reasonable distance of, if not to parity with, Leeds and Birmingham can no longer be postponed. The protection and development of genuine post-graduate education even at a high price, i.e., extra claim on the public revenues, should be considered to be an Imperial necessity,—by no means less in importance than the principle and practice of protective tariff already adopted with a view to the comparatively swift industrialization of India. Every Empire Development Scheme* should have as one of its planks the heightening of Indian post-graduate teaching in quality, quantity and variety.

Other circumstances remaining the same, the fundamental problem is financial. Educational institutions require money, more money and still more money. Private contributions and endowments from the people are no doubt to be zealously solicited. But in any case they would never suffice to cope with the requirements. Nowhere do the educational institutions depend exclusively or even mainly on the donations and subscriptions of patriotic citizens. And Bengal need not be condemned as unpatriotic simply because she fails to meet a considerable portion of her educational finance from private sources.

Appeals to the Government must therefore have to be as constant and perpetual in Bengal and other

* See the chapter on Empire Development and World-Economy in Sarkar: *Greetings to Young India* (Calcutta, 1927).

parts of India as among the peoples of all the great powers of the world. A considerable portion of Indian patriotism will have to embody itself in the ceaseless agitation directed towards raising the public expenditure on education to the higher coefficients of the world-standard along the entire front, literary, scientific as well as technical, and primary, secondary as well as post-graduate.*

* Sarkar : *The Post-Graduate University at Calcutta* (1929).

Appendix

Memorandum on Post-Graduate Studies (With special reference to Economics and the Allied Sciences)*

I. Raising the Level of Indian Culture

The world of culture has been advancing swiftly both in methods as well as in achievements. The problem for Young India is to catch up to it at the quickest possible pace, or, at any rate, prevent by all means the gap between Indian attainments and world-culture from remaining wide.

The Universities and other educational institutions of India have, therefore, from time to time to take stock of the affairs at home and abroad with a view to functioning as adequate instruments in the modernizing and up-to-datization of Indian life and scholarship. It is with the object of co-operating with those of our countrymen who have been engaged in considering the best ways and means for raising the level of Indian culture that this memorandum has been drawn up.

II. The Scale of Studies

The pedagogic discussion embodied in this memorandum implies the following scale of intellectual culture

* Originally appeared as a paper in the *Calcutta Review,* August, 1926, and also as a chapter in the author's *Greetings to Young India* (Calcutta, 1927).

from bottom upwards and is to be interpreted in this perspective :

A. Steps to a University :

The first stage, beginning with the Kindergarten and ending with I. A. and I. Sc., as obtaining in India to-day, is to furnish the entrance requirements to University life. During this period the student learns all the sciences and all the arts without any elimination whatsoever. Age about 17-18.

B. Undergraduate University : 5 years.

(1) The second stage, corresponding to the B. A. and B. Sc., of Indian Universities, compels the student to take either all the arts subjects or all the science subjects without elimination. 2 years.

(2) The third stage, corresponding to the existing M. A. and M. Sc., compels the student to take a whole "organic group" of subjects in the arts or the science line. 3 years.

C. Post-Graduate University : 2 years.

The final stage (post-M. A.) allows the student to choose a single subject as major with two or three allied minors.

III. The Financial Problem

The fundamental problem is threefold : (1) Young India must have to be at school for a longer period than at present. (2) The existing standards all along the line will have to be made more liberalizing and comprehensive. (3) Provision for real higher education (specialized, intensive, practical and up-to-date) remains yet to be made.

The question, although pedagogic, is to all intents and purposes a financial one. Patriots who have the cultural welfare of their country at heart will have to be up and doing in order to raise funds. Appeals to the Government for financial assistance will likewise have to be persistent.

IV. The Academic Standing of M.A.

1. Even if the Matriculation, Intermediate, and B. A. of our Universities be considerably improved both in standard and method of teaching, the intellectual equipment of the student at the threshold of M.A. is likely to remain low, especially since a foreign language is bound to be the medium of higher education for some long time.

2. M.A. students are generally 21-23 years old. At this age no young men and women, anywhere in the world, are expected to do high-class work as candidates for degrees, even although the mother-tongue be the medium of instruction and culture.

3. It is, therefore, desirable, both on the part of the University authorities as well as the teaching staff to be modest in regard to what the M.A. degree in India is, academically speaking, to stand for.

V. Real Post-Graduate Teaching

1. It is time to recognize frankly that there cannot be much distinction between the B.A. Honours

and M.A. and that the latter should be treated in scope as but a continuation of the former.

2. Without quarrelling over the name it is necessary also to admit that real post-graduate teaching would involve (*i*) specialization in one or two fields, (*ii*) an acquaintance with the latest developments in methodology as well as conclusions (*i.e.*, everything that is worth knowing) in regard to the subject or subjects chosen by the candidate, and (*iii*) mastery over at least two modern European languages on the part of the scholar as well as the habitual use of books and journals in those languages.

3. This result can be attained only when there is provision for at least two full years' regular schooling at the University after the M.A. to be followed by written (and if necessary, oral) examination.

4. But perhaps neither the University of Calcutta nor any other University in India is at present (*i*) financially or (*ii*) in the strength of specialized teaching staff competent enough to undertake this post-M.A. tuition.

5. Until that consummation, highly desirable as it is, can become a question of practical politics it is reasonable (*i*) to declare openly that real post-graduate teaching is not possible in India to-day and (*ii*) not to claim it for the existing M.A. work.

VI. M. A. as preliminary to Post-Graduate

1. M.A. being what it is, the problem of an adequate curriculum is essentially a question of sound pedagogics.

2. For youths of 21-23, who may later be expected to undertake specialized studies, the scheme of instruction is to provide a "minimum complex" of all-round encyclopaedic culture.

3. The problem consists in arranging a system which admits to the scholars' cognizance as many of the different arts and sciences or branches of arts and sciences of the higher grade as possible without any attempt at elimination.

4. M. A. may thus be expected to function as expanded B.A., *i.e.*, as serving to equip the scholar with a training in all those general principles and view-points of arts and seiences without which a specialization in any particular branch or sub-branch can but lead to an undue narrowing down of the mentality or a superficial and unphilosophical grasp of the complex and concrete reality.

VII. Items to be Avoided

1. It goes without saying that specialization or elimination in the matter of courses is not to be allowed at an early stage (*e.g.*, B. A. or M. A.), *i.e.*, on an insufficient ground-work.

2. Nobody should be permitted to submit a thesis in the place of one or two papers.

3. In the framing of syllabus or selection of books care should be taken to avoid attaching undue importance to any one school, standpoint or method of investigation.

4. While it is clear that for Indian students the

knowledge of Indian topics, ancient or modern, is desirable as a matter of course, one must not make a fetish of them in any group. It need be distinctly understood that real cultural training and discipline in methodology will come in most cases from the studies of Eur-American topics as treated by well-established authors. The Indian topics are generally to be valued as but furnishing certain data or certain problems of investigation and research.

To be obsessed by Indian material at the M. A. stage would be tantamount to courting blindness to liberal, standardized and practical education. On the other hand, the more experienced and efficient an Indian is in things Western, the more competent will he be as a servant of India,—in the realms of abstract philosophical discussion as much as in the fields of contemporary applied sociology.

VIII. The Foundations of Humanism

In this memorandum certain disciplines have been taken to constitute the ground-work of all liberal education. These are (1) anthropology, (2) comparative psychology, (3) economic history, and (4) history of the exact sciences and technical inventions. It is in the interest of a culture, at once humane and realistic, at once moral and practical, that these sciences should be admitted into everybody's sphere, no matter whether it is mainly philosophical, historical, literary or scientific. The firm and vital grip over facts and problems, both material and moral, and the humanistic

attitude in regard to their solution are the chief requisites in Young India's intellectual life in order to endow it with anti-anæmic, anti-mystical and anti-speculative virility.

1. It is not desirable to admit anthropology to the rank of an independent cultural unit in the scheme of M.A. studies. But this science has grown during the last two decades or so to enormous proportions. No student of the B.A. stage can afford to grow up without a preliminary grounding in the principles of anthropology. It will have to be counted as a compulsory, allied discipline in the M.A. courses also,—in history, psychology, ethics, æsthetics, philology, economic evolution, political science, etc. Anthropological training is to be regarded as an indispensable item in the irreducible minimum of humanism.

2. Like anthropology, comparative psychology also is a new science, and its cultural significance has got to be recognized in Indian Universities. The experimental analysis of mental operations in the human as well as the animal world, the objective differentiation of the nervous system according to age and sex, the bearings of health and occupation on personality, as well as the results of investigation in the submerged self, abnormalities and so forth, are phenomena of epoch-making importance with which no young scholar can be allowed to remain unfamiliar to-day. Especially is it necessary in India, where the sway of monistic psychology and absolutism in philosophical thought has obtained too long to the detrimen t

of intellectual catholicity and moral freedom. The clarification and sanity of the brain such as are sure to follow the acceptance of the pluralistic conception of the mind and the doctrines of individualistic psychology will not fail to raise mankind to a higher spiritual level, compelling chauvinism, intolerance and ethical dogmatism to retire inch by inch into the limbo of pre-historic curios.

3. The value of economic history as a discipline in positivism is no less fundamental. The superstitions regarding the alleged distinction in spirit and outlook between the so-called Eastern and Western "types" of civilization, which prevail in Eur-America as well as in Asia,—among the students of science as of philosophy, literature, and what not,—will begin to disappear as soon as the stages in the economic evolution of mankind appear before the mind's eye in a realistic manner. To persons well-grounded in the objective facts of the growth of mankind in the materialistic line, the perspective of culture will appear in all its clarity and unclouded horizon, and the problems of world-reconstruction, re-making of man, social legislation and so forth that await us today lose much of their metaphysical vagueness. Even without accepting the extreme dogmas of the "economic interpretation of history" (economic determinism, as it is called), we shall be assured of a logical apparatus and mode of thinking in societal science in which measurement, delimitation and exactitude function constantly as the curb on abstract idealism and proneness to thoughtless generalization. And we shall learn to bid adieu to pseudo-climatology and pseudo-raciology.

4. Finally, as a healthy stimulant in all intellectual pursuits—historical, artistic, philosophical or otherwise—and as a perpetual spur to progressivism and optimistic outlook on life, the study of the exact sciences and inventions in their growth and development has to be welcome in Indian academic circles among the "most-favoured" branches of learning. Young India's intellectuals, whatever be their occupations in future, need a tonic of precise, definite, instrumental thinking; and nothing is better adapted to administer strong doses of this stuff and cure mankind of spiritual malaria than is the history of exact sciences, discoveries and inventions, especially in their recent phases.

Mankind is in for a philosophical renaissance and a rearrangement of world-forces. In order that India may keep pace with the changed circumstances it is time that she equip herself with the realistic logic of a new humanism and the creative methodology of a self-confident energism, such as can be forged out of this four-fold discipline. And with the object of assuring ourselves of this great prophylactic against anæmia in the moral plane, anthropology, comparative psychology, economic history, and the history of exact sciences should be made compulsory at the B.A. stage and rendered as accessible as possible to all the M.A. students. The humanism for which this memorandum pleads will enable the educational institutions of India

to take a leading part in this new anti-malaria campaign as a matter of course.

IX. "Organic Groups"

Let me give a few illustrations, at random, of what is meant by an "organic group" or "minimum complex."

1. Comparative philology should not be regarded as an isolated study at the M.A. stage. Courses in psychology, logic, archaeology, anthropology, geography, and the history of civilization should constitute the cultural background of the philologist. An elementary course in the principles and history of extra-Indian and non-Indo-Aryan languages, namely, Chinese and Arabic, is to be introduced. And finally, courses of studies in the developments of Assamese, Bengali, Hindi, Marathi, Oriya, etc. should not be admitted without an orientation to the corresponding studies,—independent although elementary,—of the modern European languages.

2. In the scheme of studies in ancient Indian culture it is absolutely necessary to introduce the cultural history of Egypt, Babylon, Persia, China, Greece, Rome and mediaeval Europe in order to set the sociological perspective. Nobody could do justice to the achievements of Hindu civilization who happened to be weak in the knowledge of European institutions and ideals, say, from Pythagoras to Dante. It is also desirable to introduce certain liberalizing studies, e.g., methodology, the history of literature, fine arts, philosophy etc., anthropology, specimens of historical

classics in the European languages, and economic history. There is a tendency in the prevailing academic circles to study ancient and medieval India in a state of "spendid isolation." This is a most vicious practice.

3. Philosophy has to be made objective by the introduction of economic studies and political history. Anthropology and applied sociology should likewise have a place in the philosophical group. A course in the progress of the exact sciences and technical inventions in recent times is also a desideratum. The student of philosophy must also be made normally to realize the influences of experimental psychology.

4. The historical group must comprise,—among other compulsory topics,—anthropology, geography (economic and historical), economic history, the study of international relations or foreign policies, psychology, logic, the growth of the human mind as reflected in the arts and sciences, history of philosophy, and a history of historical literature including archæological researches.

5. Experimental psychology must not constitute an independent study by itself at the M. A. stage. The history of the exact sciences should naturally belong to this group. Then all the varied branches of applied psychology, social, industrial (psychotechnique), pedagogic, business, medical, criminological and so forth will have to be accorded a place in the system. And courses in liberal culture would include logic, metaphysics, ethical *mores*, applied sociology,

anthropology, and history of fine arts and literary criticism.

Naturally, the bounds of these "organic groups" or "minimum complexes" will vary from time to time according to circumstances,—almost in the same manner as the definition of the "key industries."

X. General Remarks in regard to Economics

1. Certain subjects indispensable to every student of social science ought to have a definite place in the scheme of studies in economics. These are (*i*) modern economic history and (*ii*) modern constitutional history.

2. Statistics cannot be treated as optional, while mathematical economics, if necessary, may.*

3. In international law and sociology the historical treatment seems to have been ignored in the system obtaining at present at Calcutta.

4. The existing curriculum, it appears further, has no paper on the principles of legislation. Equally unknown is private international law.

5. Labour problems and labour economics constitute some of the greatest formative agencies in contemporary social thought. But there is no well-defined place for these topics in the present syllabus.

6. Land-legislation should be regarded as an important independent item.

7. Studies in co-operation as well as business organization require also to be specified.

* Sarkar: *The Post-Graduate University at Calcutta* (1929), pp. 43-44.

XI. Suggestions *re.* Teaching

1. The following scheme of studies for M. A. in economics, politics and sociology is made up on the basis of ideas set forth in the above sections.

2. All the eight papers each with two halves are compulsory. In order to do justice to the subject ten papers might be deemed necessary.

3. The number of lectures on each half is to be about 60. For each half the students will be expected to read at least 700-750 pages from several well-selected standard authors.*

4. In the case of those half-papers in which India is to figure as one of the contributing items, Indian material should occupy about 25 per cent. of the lectures.

5. As a rule, one or two text-books are to constitute compulsory reading material in regard to each half. Chapters or sections in other books or journals may be recommended for reference purposes, but within reasonable limits. Examinations should be conducted on this basis, questions being fairly distributed over the books.

6. As the multiplicity of subjects forms the essential feature of these suggestions, it is necessary that the teachers make it a point to select the most important topics and reject the avoidable details. (Detailed

* In the 1926 *edition* the number of hours suggested was smaller. *Re.* the number of pages see Sarkar: *The Post-Graduate University* (1929), pp. 32-33.

intensive work is reserved for post-M. A., if that is ever to come.)

7. In the interest of co-ordination of studies the teaching staff should at least once a quarter organize academic conferences or social gatherings to which students need not be invited.

XII. M. A. Examination Papers in Economics, Politics and Sociology

First Paper

Economic and Constitutional History of the Great Powers since 1870 but with special reference to the post-war period.

First half: Economic Developments.

Second half: Constitutional Developments.

Second Paper

Theories in Economic Science (Pure Economics), with statistical and mathematical applications, excluding descriptive and historical material.

First half: Value (Distribution and Exchange).

Second half: Money, Banking and International Trade.

Third Paper

Categories and Contents of Contemporary and Modern Political Thought (since 1870).

First half: Mazzini, Mill, Treitschke, Leroy-Beaulieu, Green, Marx, Loria, etc.

Second half: Sidgwick, Gierke, Duguit, Woodrow Wilson, Lenin, Joseph-Barthelemy, Spann, Laski, Mussolini, etc.

Fourth Paper

The Political Institutions (constitutional law and administrative law) of modern states including India.

First half: The Machinery of Central Government.

Second half: Municipal and Local Administration.

Fifth Paper

First half: Public Finance as Science with illustrations from India as well as Europe, America and Japan.

Second half: Statistics and Mathematical Economics (elementary).

Sixth Paper

First half: French or German.

Second half: Essay.

Group A—Economics

Seventh Paper

First half: History of Economic Doctrines and Methods (including a survey of modern Indian economic thought.)

Second half: Labour Statistics, Movements and Legislation in Economic History and Theory.

*Eighth Paper**

Applied Economics and Economic Legislation.

First half: Systems of (*i*) Tariff, (*ii*) Currency, (*iii*) Bank-Policy, (*iv*) Transportation: including Indian data in each instance.

Second half: (*i*) Land Tenures, (*ii*) Business Organization, (*ii*) Co-operation, (*iv*) Insurance: including Indian data in each instance.

Group B.—Politics

Seventh Paper

History of Political Theories from the earliest times down to 1870 (in the background of political evolution).

First half: Western.

Second half: Indian.

Eighth Paper

Principles of Legislation.

First half: Historical and Sociological Jurisprudence.

Second half: Comparative Legislation: The Civil (marriage and property) Laws of Great Britain, France, Germany, U. S. A. and India.

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* In the 1926 edition options were allowed in regard to the different items of each half. But in order to place the eighth paper on a uniform basis and make it equally weighty in all the four Groups the options are being removed in the present publication.

Group C—International Law

Seventh Paper

First half: History of the Theory of International Law (in the background of the evolution of political thought).

Second half: Modern Diplomacy and International Relations (since 1650) including Western intercourse with Asia and Africa.

Eighth Paper

International Law

First half: Public International Law.

Second half: Private International Law.

Group D—Sociology

Seventh Paper

First half: History of Social Theories: Study of the Problems and Methods in Social Philosophy; From Plato and Kautilya down to Ward, Durkheim, Gumplowicz, Simmel, Hobhouse, etc.

Second half: Social Institutions (Oriental and Occidental; ancient and modern, primitive and developed): descriptive and historical treatment of family, property, state, myth, language, and arts and sciences.

Eighth Paper

First half: Social Psychology (analysis of the *psyche* in reactions to the group), instinct, intelligence,

folk-ways, forms of group life, public opinion, leadership, etc.

Second half: Applied Sociology (problems and methods in the re-making of man, societal reconstruction and national betterment or welfare): eugenics, pedagogics, criminology, economic legislation, control of poverty, social assurance, birth control, welfare schemes, town-planning, rural reconstruction, internationalism, colonization, etc.

XIII. General Remarks in regard to Commerce

All the principles indicated in the previous discussion are taken to be valid in the scheme of commercial education. One or two special considerations may be pointed out:

(*i*) The bias is to be more commercial than economic.

(*ii*) Commerce is not to be treated as identical with buying and selling, e.g. the science of stores and foreign trade, but is to be regarded as comprehensive enough to include insurance, transportation, and banking as independent items.

XIV. M. A. Papers in Commerce

Eight papers, all compulsory. Each paper consisting of two halves, each half compulsory. Ten papers might be considered necessary as in the case of M. A. Economics.

First Paper

First half: Business Organization.

1. Forms of organization.
2. Methods or machinery of business.

Second half: Economics of Commerce.

1. Descriptive-historical.
2. Theory of Value as applied to Prices, Wages, Exports, Imports, Foreign Exchange, Insurance, Shipping and Railway Rates, Share-Market, Interest, Discount, etc.

Second Paper

First half: Inland and Foreign Trade.

Second half: Merchandise. (1) Raw produce from land, forests and mines, (2) Machineries and (3) Chemicals. This is a purely technical study and is to be treated as thoroughly independent of industrial or commercial geography.

Third Paper

First half: Problems in bank management with special reference to the calculation of risk.

Second half: Stock Exchange and Money Market.

Fourth Paper

First half: Elementary insurance and actuarial work.

Second half: Transportation.

Fifth Paper

First half: Commercial Law.

Second half: Legislation on Tariff, Currency and

Taxation with special reference to Partnerships, Joint Stock Companies and Trusts.

Sixth Paper

First half: Commercial Geography.
Second half: History of commerce in the background of the world's material and cultural evolution.

Seventh Paper

First half: Accounting and Costing.
Second half: Auditing.

Eighth Paper

First half: Statistical methods in Commerce and Commercial Arithmetic.
Second half: Foreign language:—one of French, German and Japanese.

Note: This *Memorandum*, first published in 1926, has been reprinted here with one or two additional words and phrases, which altogether do not make more than four or five lines, but without modification of any sort except as indicated in two footnotes, *supra*. It is to be read along with the author's *Scheme for the Constitutional Reorganization of the Post-Graduate University at Calcutta* published in the "Calcutta Review" for March, 1929. See also the author's *Post-Graduate University at Calcutta : An Objective Study* (1929) for this *Scheme* as well as the *rationale* of criticisms and suggestions *re*. University affairs.

WORKS BY BENOY KUMAR SARKAR

1. **Economic Development** : Snap-shots of World-movements in Commerce, Economic Legislation, Industrialism and Technical Education, based on French, German and Italian sources. Pages 36+428. Price Rs. 8 (Madras).

2. **The Politics of Boundaries and Tendencies in International Relations**. based on French, German and Italian sources, Pages 18+322. Price Rs. 3/8/- (Calcutta)

3. **Greetings to Young India**, Pages 182, with facsimiles of American, French, German and Italian documents, Re 1-0-0 (Calcutta).

4. **The Political Philosophies Since 1905**: Their Origins and Their Tendencies. An Objective and Chronological Survey. With a foreword by Major B. D. Basu, I. M. S., (Retired). Pages 404, Rs. 4 (Madras).

5. **The Futurism of Young Asia**, and other Essays on the Relations between the East and the West, based on the author's articles published in the scientific journals of Ameriea, France and Germany, Pages 103+99. Rs. 9.

6. **The Political Institutions and Theories of the Hindus**, based on lectures delivered in Columbia, Clark and other American Universities as well as the Universities of Paris and Berlin. Pages 24+242 Price Rs. 9/- (Leipzig).

7. **The Science of History and the Hope of Mankind**, Pages 8+76, Price Rs. 2.0.0 (London).

8. **Introduction to the Science of Education**, Pages 32+141. Rs. 2-8-0 (London).

Some Economic Brochures by Benoy Kumar Sarkar

1. Shipping and Railway Policies in Economic Legislation, pages 16.
2. The Bank-Notes and Note-Banks of Germany, pages 16.
3. The Law and the Cultivator : The Example of France, pages 13.
4. Investments and Business Organization for Bengal Capitalists, pages 9.
5. Empire Development and World-Economy : A study in the New Foundations of National Economy for India, pages 9.
6. Types and Tendencies in American Banking, pages 36.
7. Trusts and Rationalization : Aspects of the New Industrial Revolution, pages 33.
8. The Arthasastra of Young Bengal (in Bengali), pages 54.
9. The Earnings and Social Values of Clerical Labour, pages 24.
10. Bengali Banking in Comparative Bank Statistics, pages 16.
11. The Pressure of Labour upon Constitution and Law (1776-1928), pages 59.
12. The Methods of Economic Research Initiated by the Arthik Unnati (in Bengali) pages 40.
13. Economic Statesmanship in its Bearing on Material Prosperity (in Bengali) pages 24.
14. The Logic of Economic Progress (In Bengali), pages 37.