

THE SCIENCE AND ART DEPARTMENT

1853-1900

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VOLUME THREE

Part Three - Political and Social Setting

Part Four - Conclusions, Biographies, Statistics and Bibliography

PART III

POLITICAL AND SOCIAL SETTING

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## CHAPTER THIRTEEN

## THE POLITICIANS

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a) Parliamentary differences at government level

It would be difficult to argue that the successive leaders of either major party had any consistently maintained policy to promote or to hinder the development of the Department: it has, however, been noted that much of the support for the Consort's schemes in the early days came from the Conservatives. If the attitude shown to the policies and plans of the chief officials by their political chiefs is considered, it will be seen that there were two periods when there was notable disagreement, if one leaves aside the initial time when relationships with Cardwell were so bad. The first of these was at the time of the first Gladstone administration, which was marked, so far as the Department was concerned, by the "economy drive" initiated by Lowe, and by the scheme for the transfer of the responsibility for the Museum to the trustees of the British Museum. The second period was during the last Gladstone and the Rosebery administrations, when Donnelly was faced with a "reforming" chief in the person of Acland. The policies of reform were carried on by Acland's Conservative successors, but there would appear to have been less personal acrimony, if the tributes paid by Devonshire and Gorst to the Secretary were meant sincerely.

If, however, one considers the figures of the Department's annual expenditure,<sup>1</sup> slightly better treatment of the Department by Conservative administrations is revealed. Although relatively minor changes in totals could cause greater fluctuations in the earlier part of the period, there was a tendency for a reduction in estimates, and for a slower rate of increase of expenditure, during Liberal administrations. Only at the very end of the period, when there was a gradual giving up of functions by the Department, did Conservative administrations reverse the trend, and the last of these administrations finally approved the building programme which was, at last, to give a proper home to the Museums and to the Schools, although its expenditure on these features lay outside the period of this study.

b) Causes of parliamentary opposition

i) General areas of criticism

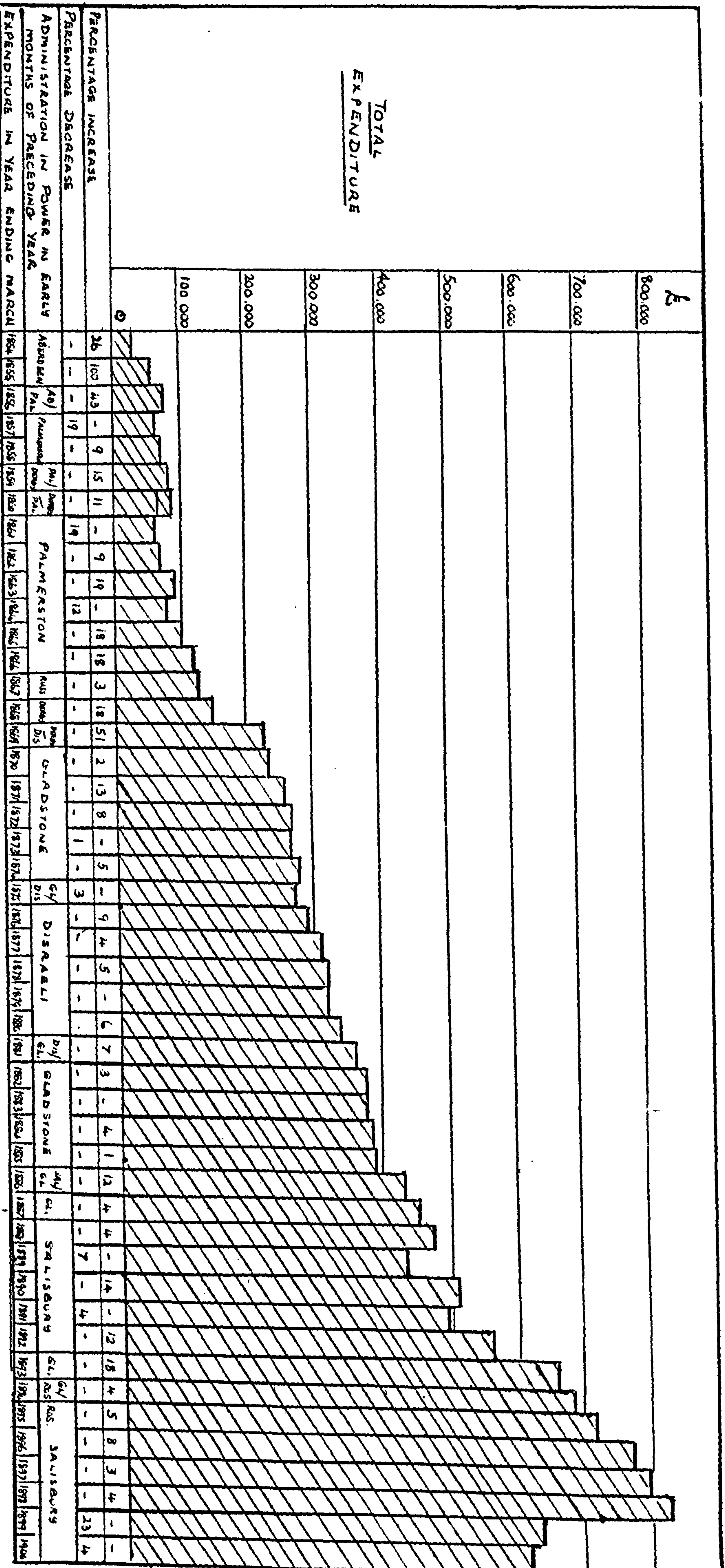
The degree of the unpopularity of the Department with Parliament varied from time to time, and the differences which existed are shown, to some extent, by the numbers of individual critics in a particular year. If this is read



THE ADMINISTRATION NAMED IS THAT WHICH WAS IN OFFICE IN THE EARLY MONTHS OF THE PRECEDING YEAR, WHEN ESTIMATES WERE BEING PREPARED.

TABLE B  
ANNUAL EXPENDITURE BY ADMINISTRATIONS

CAPITAL EXPENDITURE ON BUILDINGS IS NOT INCLUDED AFTER 1869.





with details of the particular areas of criticism at certain periods, a pattern emerges which is of some interest. An attempt has been made to summarise these details in the tables which are given in succeeding pages.

From Table C it will be seen that the Department was consistently criticised for "over-expenditure", and that there was a general belief in some quarters that its accounts and estimates were presented in such a way that "jobbery", as well as other misuse of funds, was hidden. There were charges from time to time that the proportions of expenditure on the costs of administration were too high. The Museum was the greatest single target of criticism: objections were usually coupled with criticisms of general administration and expenditure. Fears of over-centralisation, and of an extension of the Department's powers, were expressed from time to time. Complaints by Members that there was a concentration of resources in the Metropolis were general throughout the period. Irish members were particularly vocal on this point, but the Scots, and later the Welsh, added their objections, and representatives of the English provinces were concerned, too.

The objections of many members were based, as will be seen, on a hatred of "government interference". When the principle of state provision of aid to education had been accepted, especially by the "new" generation of Liberals, who wished to extend it, criticisms that the Department was not acting as an efficient agent in that provision were expressed. Relations with its sister Department, and its apparent immunity to Parliamentary control, received particular scrutiny. Doubts were only rarely offered that its teaching was failing in its purpose. The "military influence" came under scrutiny at the end of the period, but Cole and Donnelly were criticised by name and by implication on a number of occasions. Features which were really limited to the earliest period were doubts of the whole purpose of the Department, and these were often coupled with fears of the "Royal influence".

ii) The "Royal influence"

Reference to the connections between Cole and the Consort have been made.<sup>1</sup> The Consort made at least three approaches to Conservative leaders after his initial success in 1852. Lord Colville, Disraeli's "whipper" (sic) in the Lords, was asked to speak to his chief on estimates in 1857, but even then it was feared that "some intractable members of the party ... are people with whom little can

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1 Chapter IV Section (j)(ii)



TABLE C  
AREAS OF CRITICISM BY MEMBERS OF PARLIAMENT

AREA	ADMINISTRATIONS																	
	DERBY 1852	ABERDEEN 1852-55	PANMERSHAW 1855-58	DERBY 1858-59	PANMERSHAW 1859-65	RUSSELL 1865-66	DERBY 1866-68	DISRAEL 1868	GLASGOW 1868-74	DISRAEL 1874-80	GLASGOW 1880-1885	GLASGOW 1885-86	GLASGOW 1886	SALISBURY 1886-1892	GLASGOW 1892-1894	REID 1894-5	SALISBURY 1895-	
"JOBBERY"/"SOUTH KENSINGTON PARTY"																		
ROYAL INFLUENCE																		
GOVERNMENT INTERFERENCE																		
BASIC NEED DOUBTED																		
TEACHING FAILING IN PURPOSE																		
GENERAL MANAGEMENT																		
SPECIFIC OFFICIALS CRITICISED																		
"MILITARY INFLUENCE"																		
EXCESSIVE COSTS OF ADMINISTRATION																		
PRESENTATION OF ESTIMATES																		
OVER-ENTRAPISATION																		
RELATIONS WITH LOCAL AUTHORITIES																		
RELATIONS WITH EDUCATION DEPT.																		
FEAR OF EXPANSION OF POWERS																		
GENERAL OVER-EXPENDITURE																		
ABSENCE OF PARLIAMENTARY CONTROL																		
GENERAL ADMINISTRATION																		
OVER-EXPENDITURE																		
DOUBT OF WHOLE PURPOSE																		
GENERAL																		
IRELAND																		
SCOTLAND																		
WALES																		

PROVINCIAL COMPLAINTS



be done".<sup>1</sup> "The Prince has recommended Kensington to Disraeli's special protection", Cole was told in 1858<sup>2</sup>, after he had asked for help over the Soulages purchase.<sup>3</sup> Two Commons whips had "promised to do all in their power to dissuade our people from opposing the museum vote", and Disraeli's own support could be relied upon, but "there must be no surprise if the Commons feeling against the museum showed", in 1861.<sup>4</sup> The Consort was aware of the need to handle the politicians tactfully. He approved the name "Kensington Gardens", but suggested that it was not given too much publicity, "as the fight is not yet over".<sup>5</sup> He "did not wish to appear" in the list of subscribers to the Soulages purchase, and advised against the dangers of the scheme.<sup>6</sup> He counselled "care" over the acquisition of collections,<sup>7</sup> and advised against a joint visit of Court and politicians before the opening of the Museum in 1857, while agreeing that there was need to influence legislators.<sup>8</sup> When Cole produced a pamphlet on the transfer of the National Gallery even after the defeat in 1856, saying "there is no knowing where the noisy opportunists in Parliament will drive the government",<sup>9</sup> the Consort blessed the scheme, but strongly advised anonymous publication.<sup>10</sup> He knew that "The House of Commons becomes restive when it thinks that statesmen and Ministers are moved by the Crown".<sup>11</sup> Individual criticisms will be recorded later,<sup>12</sup> but it should be noted that the "Royal influence" objections had begun to subside before the Consort's death. The charge by J.S. White, a Liberal member, that "thousands of pounds was taken from the pockets of the working classes for the Consort's favourites" was described by the Art Journal, no friend to the Department, as "vulgar, ignorant, and a gross mis-statement".<sup>13</sup> (White's only comment in the House on the Department was that "he was for Free Trade for all ... it is ridiculous to try to breed artists". He denied that public taste could be improved, and said "South Kensington is not a place for artists but for dilettantes".<sup>14</sup>) The fears lingered, however, and the beliefs in the existence

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1 M.S. letter Grey to Cole n.d. (1857?)

2 MS letter Grey to Cole 6 March 1858

3 MS letter Cole to Grey 6 March 1858

4 MS letter Grey to Cole 19 July 1861 enclosing MS letter Colville to Grey 18 July 1861

5 MS letter Grey to Cole 29 October 1856

6 MS letters Grey to Cole 27 July and 2 September 1856

7 MS letter Grey to Cole 2 September 1856

8 MS letter Grey to Cole 13 July 1857

9 MS Cole to Grey 17 September 1857

10 MS letter Grey to Cole 20 September 1857

11 MS letter Phipps to Cole 18 August 1856

12 Section (d)

13 Art J. February 1861

14 Hd. CLXXXIX (1865) 1176



of a "South Kensington party" were linked with criticisms of the activities of Henry Cole: reference has been made to these, and also of the ways in which Cole was able to win over many of his critics.<sup>1</sup>

iii) Specific periods of unpopularity

If details are extracted of occasions on which criticisms were made in particular years, it will be noted that they reached a peak at four separate periods.<sup>2</sup> In the years from 1863 to 1868, the "imposition" of payments on results on the Schools of Art, together with suggestions of mismanagement of the Paris Exhibition of 1867, caused particular concern. Criticisms again came to a head in the last years of the Sandford "interregnum", from 1878 to 1883, when the Department's own success involved it in increasing expenditure and extension of its services. The third "peak" was reached between 1887 and 1889, when fears were expressed at the extension of powers involved in the allocation of the role of "adjudicator" in questions of Technical Instruction. The fourth, and final, period came with the last years of the Department, when its whole system was under attack.

c) Party differences at "back-bench" level

If the occupations of members who expressed criticisms in the House on more than one occasion are investigated, no particular pattern emerges, save one which reflects the general composition of the House during the period, but the opposition of the "employers" class is most marked.

TABLE E

OCCUPATIONS OF PARLIAMENTARY CRITICS

EMPLOYERS	TOTAL	OTHER CRITICS	TOTAL
Merchant	8	Solicitor/Barrister	9
Textile Manufacturer	3	Banker	5
Manufacturer	2	Landowner/"Gentleman"	6
Iron-Founder	1	ex-Army	3
Engineer	1	Journalist	3
Builder	1	Artisan	2
Printer	1	Surgeon	2
		Teacher	2
		None	2
TOTAL	17	TOTAL	34

1 Chapter III Section (a)(iii) and Chapter IV Sections (j) (iii) and (iv)

2 Table D



TABLE D  
PERIODS OF MAJOR CRITICISM

Year	Individual Critics	Estimates		Year	Individual Critics	Estimates	
		General	Building			General	Building
1852	-	-	-	1876	-	-	-
1853	-	-	-	1877	-	-	-
1854	3	-	-	1878	7	+	-
1855	-	-	-	1879	7	+	-
1856	3	-	-	1880	8	+	-
1857	6	*	-	1881	16	+	*
1858	7	+	-	1882	3	-	*
1859	7	+	-	1883	10	-	-
1860	5	*	-	1884	4	-	-
1861	-	-	-	1885	-	-	-
1862	6	*	-	1886	1	-	-
1863	10	*	-	1887	12	-	-
1864	7	*	-	1888	8	*	-
1865	12	*	-	1889	10	*	-
1866	1	-	-	1890	4	-	-
1867	10	-	-	1891	-	-	-
1868	10	*	-	1892	-	-	-
1869	3	-	-	1893	5	-	-
1870	2	-	-	1894	3	-	*
1871	4	-	-	1895	-	-	*
1872	2	-	-	1896	8	*	-
1873	2	-	-	1897	6	-	-
1874	2	+	-	1898	7	*	-
1875	1	-	-	1899	5	-	-

\* Reduction moved on the estimates

+ Reduction suggested, but withdrawn

Bartley's reductions in 1894 and 1895 were in criticism of the Government, and not of the Department.

Separate estimates for Buildings were not introduced until 1870.

It has been suggested<sup>1</sup> that Liberal administrations, on the whole, showed a less favourable attitude to expenditure by the Department on its activities. As far as "rank and file" members were concerned, opposition to the Department was much more marked. A list of members who criticised the Department on more than one occasion<sup>2</sup> shows 37 Liberals, 3 Liberal-Conservatives, 10 Conservatives and one Irish Nationalist in opposition. Back-bench members who were prepared to defend the Department on even single occasions were 12 Liberals, 2 Liberal-Conservatives, one Irish Nationalist and 6 Conservatives. Attempts were made to reduce the annual estimates on thirteen separate occasions, for reasons of dissatisfaction with the Department, as distinct from objections to its treatment by the government of the day. Eleven of these attempts were made during Liberal administrations, and of the nine members involved, some of whom moved a reduction more than once, only one was a Conservative.<sup>3</sup>

The basic Liberal objection, although it ceased to be expressed overtly in later years, was on the grounds of state intervention. "I suspect all these attempts to teach people their trades", John Bright, arch-priest of the Manchester School, told Cole at the outset of the Department's career.<sup>4</sup> Although Cole invited him to "come to Marlborough House and see for yourself"<sup>5</sup> and he later hoped "to do so",<sup>6</sup> a comment noted by Cole in 1860 ("Bright on the South Kensington humbug"<sup>7</sup>) suggests that there had been no change of heart. Edward Baines, one of the founders of the Yorkshire Union,<sup>8</sup> "disputed the fundamental principle of government interference".<sup>9</sup> (He made no attacks in the House, however). While he later criticised "the miserable results of elementary drawing",<sup>10</sup> by 1871 he had mellowed to the point where he paid a tribute to an Educational display at South Kensington, and said that "every School Board should visit the Museum".<sup>11</sup> The Liberals were also fundamentally opposed to "the Royal influence". The objections of individual members will now be detailed.

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1 Section (a)

2 Table F

3 Table G

4 MS letter Bright to Cole 14 February 1853

5 MS letter Cole to Bright 4 May 1853

6 MS letter Bright to Cole 10 May 1853

7 Cole MS Diary 21 June 1860

8 Union of Lancashire and Cheshire Institutes 1839-1939 (Manchester, U.L.C.I., 1939) 7

9 N.A.P.S.S. Report 1859 404-405

10 R.C.T.I. A. 473

11 N.A.P.S.S. Report 1871 76-98



TABLE F ~ PARLIAMENTARY CRITICS & DEFENDERS

NAME	OCCUPATION	PARTY	ADMINISTRATIONS																	
			DERBY 1852	ARLINGTON 1853-55	PALMERSTON 1855-58	DERBY 1858-59	PALMERSTON 1859-65	RUSSELL 1865-66	DERBY 1866-68	DISRAELI 1868	GLADSTONE 1868-74	DISRAELI 1874-80	ROBERTSON 1880-1885	SAUSBURY 1885-86	GLADSTONE 1886	SAUSBURY 1886-1892	GLADSTONE 1892-1894	ROBERTSON 1894-5	SAUSBURY 1895-	
ANDERSON G.	MERCHANT	LIB.					*													
AVATON A.S.	BARRISTER	LIB.																		**
BARTLEY G.C.T.	BANKER	CONS.																		
BALGARRA L.D.	LANDOWNER	CONS.																		
BARTLEY W.B.	EX-ARMY	CONS.																		
BENTINCK C.W.P.	BARRISTER	CONS.																		
BIGGAR J.C.	MERCHANT	LIB.																		
BLACKBURN P.	BANKER	LIB. CON.																		
BLAKE J.	MERCHANT	LIB.																		
BOOTH S.	BARRISTER	CONS.																		
BRADLAUGH C.M.	JOURNALIST	LIB.																		
BURNS J.	ARTISAN	LIB.																		*
CALDWELL T.	TEXTILES	LIB. U.																		
CAMPBELL G.	BARRISTER	LIB.																		
CANNON C.	BARRISTER	CONS.																		
CLARK G.B.	SURGEON	LIB.																		
CONINGHAM W.	EX-ARMY	LIB.																		
COLLINGS J.	MERCHANT	LIB.																		
DILLWYN L.L.	BANKER	LIB.			*															
DIXON G.	MERCHANT	LIB.																		
DRUMMOND H.	BANKER	TORY																		
EACHO A.D.	LANDOWNER	LIB. CON.																		
EARINGTON G.	MERCHANT	LIB.																		





CRITICISM OF DEPARTMENT  DEFENCE  REDUCTION ON ESTIMATES MOVED  REDUCTION WITHDRAWN 









TABLE G  
VOTES MOVED FOR REDUCTION OF ESTIMATES

		RESULT OF VOTE		
		FOR	AGAINST	
		—	==	
		190		
		180		
		170		
		160		
		150		
		140		
		130		
		120		
		110		
		100		
		90		
		80		
		70		
		60		
		50		
		40		
		30		
		20		
		10		
		0		
DATE	PROPOSER (S)	CAUSE	ESTIMATES	ADMINISTRATION
29.VII.57	DILLWYN (L) SPOONER (C)	GENERAL EXPENSE	GENERAL	FIRST PALMERSTON
29.VII.57	DILLWYN (L)	GENERAL EXPENSE	GENERAL	FIRST PALMERSTON
4.VIII.60	AYRTON (L)	"EXTRAVAGANT"	GENERAL	SECOND PALMERSTON
20.VIII.60	CONINGHAM (L)	"EXTRAVAGANT"	GENERAL	SECOND PALMERSTON
8.V.62	DILLWYN (L)	GOVT. INTERFERENCE	GENERAL	SECOND PALMERSTON
11.VI.63	A. SMITH (L)	SIC. RESOURCES	GENERAL	SECOND PALMERSTON
30.VI.64	A. SMITH (L)	OVER EXPENDITURE	GENERAL	SECOND PALMERSTON
1.VI.65	DILLWYN (L)	GENERAL EXPENSE	GENERAL	SECOND PALMERSTON
4.VI.68	DILLWYN (L)	GENERAL EXPENSE	GENERAL	SECOND PALMERSTON
4.VI.68	GREGORY (L)	ART CATALOGUE	GENERAL	FIRST DISPERSE
9.VI.81	DILLWYN (L)	WIND PURCHASE OF MUSEUM	DUBUN MUSEUM	SECOND GARDSTONE
21.V.83	LABOURDELL (L)	OVER EXPENDITURE	BUILDINGS	SECOND GARDSTONE
16.XI.88	LABOURDELL (L)	OVER EXPENDITURE	GENERAL	SECOND SAUNDERS
11.IV.89	CLARK (L)	"NEEDS" OF SCOTLAND	GENERAL	SECOND SAUNDERS
30.III.94	BARTLEY (C)	BUILDINGS	BUILDINGS	ROSEBURY
14.VI.95	BARTLEY (C)	BUILDINGS	BUILDINGS	ROSEBURY
10.VII.96	CADWELL (L)	GENERAL	GENERAL	THIRD SAUNDERS
5.VII.98	CLARK (L)	GENERAL	GENERAL	THIRD SAUNDERS

d) The "back benchers"i) Liberals and Radicals

W. Williams (1789-1865) (Radical M.P. for Coventry 1835-1847, Lambeth 1850-1865)

Williams had been employed as a Warehouseman, and had made a small fortune as a merchant. "He took an active part in lessening estimates",<sup>1</sup> and, as the "Wiscount", was particularly beloved by Punch, as "penny wisdom's constant friend".<sup>2</sup> The Central School of Design was, in his opinion, "not the least use whatever",<sup>3</sup> although he was in favour of provincial Schools.<sup>4</sup> He criticised the Department's spending, particularly on "two Secretaries",<sup>5</sup> but after Lowe had told Cole that "Williams would support Department if grant given to Lambeth for School of Art",<sup>6</sup> he made no further criticisms. He paid a somewhat grudging tribute to the "improvement of taste" in 1859.<sup>7</sup>

Joseph Locke (1805-1860) (Liberal M.P. for Honiton 1847-1860)

Locke, one of the most prominent civil engineers of his day, had been articled to George Stephenson. He was a F.R.S., and President of the Institute of Civil Engineers for the last two years of his life. "From his intimate acquaintance with France (he) had imbibed very strong prejudices against centralisation and of employing national money for local purposes". A vision of the French Polytechnique filled him with horror".<sup>8</sup> This was, in fact, how Locke saw the whole scheme for Science and Art instruction. "A step which will lessen the individual exertion ... which has been the mainstay of the mechanical industry of this country", was his description of the South Kensington land purchase scheme, and he "dreaded the consequences".<sup>9</sup> In 1860, he wanted "the Museum to be done away with, as it is a complete failure".<sup>10</sup> Cole believed that Locke's "enmity really arose from a supposed slight by the Prince Consort at the Great Exhibition".<sup>11</sup>

W. Coningham (1815-1884) (Liberal M.P. for Brighton 1857-1864)

An ex-Army officer, Coningham was a staunch defender of private enterprise and an opponent of Royal influence. He launched a tirade against

1 Boase

2 Pch. 20 April 1859

3 Hd. LIII (1840) 1324

4 Hd. LXV (1842) 147

5 Hd. CXXXIV (1854) 1005

6 Cole MS Diary 15 December 1859

7 Hd. CLV (1859) 374

8 J. Devey The Life of Joseph Locke Civil Engineer (London Bentley 1862) 301 and 312.

9 Hd. CXXIII (1852) 1035

10 Hd. CLIX (1860) 725-726

11 Cole MS Diary 16 February 1861



"modern Art" and State or Royal patronage in his first year in the House,<sup>1</sup> said that he had "the greatest distrust ... for state grants to encourage Art,"<sup>2</sup> and believed that it was "useless to stimulate a demand which does not exist".<sup>3</sup> He wanted to "strike at high places and put down extravagance".<sup>4</sup> He attacked "a system of jobbery which if exposed would shake the House", and called the Museum "a great toy", and "an advertisement shop in competition with the traders of the Metropolis". He wished that "the intrigues of Windsor would end" and said that its encouragement of the Department was "a Court job", agreed to by Ministers who were "crawling to get into the Cabinet".<sup>5</sup> (Even the Art Journal, on this occasion, believed that his observations were "flagitious"<sup>6</sup>). The "irresistible influence in the Councils of the Queen" was "a secret influence adverse to the public interest",<sup>7</sup> and he moved a reduction of the estimates in 1860, because of "profligate expenditure".<sup>8</sup> He called the 1862 Exhibition buildings "an architectural abortion", and in wrongly charging that they had been designed at the School of Art, commented that "this does not say much for that institution".<sup>9</sup> In his opinion, "a skilful architect should have been employed".<sup>10</sup> Coningham's period in the House lasted for only seven years: his attitude to all the schemes in which the Department were involved was consistently critical and was expressed in a virulent manner.

L.L. Dillwyn (1814-1892) (Radical Liberal M.P. for Swansea 1855-1892)

Dillwyn was a Welsh banker, railway promoter, and pottery manufacturer, who "reflected the industrial and commercial interests and political radicalism of his father and Quaker forebears".<sup>11</sup> For most of his forty years in Parliament he resisted the Department on every possible occasion. He moved four of the thirteen reductions on the estimates (actually making six motions) which were based on objections to the Department's policy, more than any other member, and threatened reductions, which he later withdrew, on two more occasions. His first attack came two years after his first election, when he queried

1 Hd. CXLVI (1859) 584

2 Hd. CLI (1858) 1171

3 Ibid. 1178

4 Hd. CLV (1859) 368

5 Hd. CLX (1860) 1306-1307

6 Art J. October 1860

7 Hd. CLXI (1860) 1547-1549

8 Ibid. 1661

9 Hd. CLXV (1862) 1792-1793

10 Hd. CLXXI (1863) 765

11 Dictionary of Welsh Biography to 1940 (Oxford Blackwell 1949)



expenditure on salaries, claimed that he had "never heard of Mr. Redgrave", and moved the first of his reductions.<sup>1</sup> He moved, but withdrew, a reduction in 1858, because of increased expenditure,<sup>2</sup> and denounced the Boilers as "trumpery" in 1860.<sup>3</sup> He twice moved a reduction in 1862: although he disclaimed "any hostility", he "doubted the propriety of using public money to support the government as a teacher of drawing".<sup>4</sup> It was, he believed, "no business of the government to teach Science and Art", in 1864.<sup>5</sup> The Museum was "a hideous collection of rubbish under the influence of Barnum ... presenting a collection of snuff-boxes and hurdygurdies", he said in 1865, when he again moved a reduction.<sup>6</sup> It was Dillwyn who drew the attention of the House to the circumstances surrounding the Soulages purchase, and he accused Cole of "fraud and deception".<sup>7</sup>

He was one of the leaders in the outcry against the Paris Exhibition purchases in 1867,<sup>8</sup> and against the Art Catalogue in 1868.<sup>9</sup> He objected to "expensive mural decorations in the Museum" in 1871.<sup>10</sup> He led another attack on the estimates in 1874,<sup>11</sup> believed the following year that it was "high time that such expenditure was stopped",<sup>12</sup> and thought that there was "but a small return for the cost".<sup>13</sup> Estimates were "intentionally vague", he charged in 1877,<sup>14</sup> and he launched another attack on costs in 1878.<sup>15</sup> He queried the purpose of Solar Physics in 1880,<sup>16</sup> and moved the last of his reductions, against the building of a new Museum in Dublin, in 1881.<sup>17</sup> In that year, the South Kensington Museum was "a useless establishment".<sup>18</sup> He supported Labouchere's motion for a reduction in 1883,<sup>19</sup> and his last attack was on the "Professors' extraordinary salaries" in that year.<sup>20</sup>

Although Dillwyn served for a further nine years in the Commons, he seems to have exhausted himself on the topic of the Department, although it is perhaps significant that his attacks ended with the death of Cole. Although he spoke only once in the House on the subject of the School of Mines, his initial distrust of the Department and its officials could have stemmed from

1 Hd. CXLVI (1857) 572-574

2 Hd. CLI (1858) 1201

3 Hd. CLIX (1860) 726

4 Hd. CLXVI (1862) 1528

5 Hd. CLXXVI (1864) 561

6 Hd. CLXXIX (1865) 1163-1164

7 Hd. CLXXX (1865) 410-412

8 Hd. CLXXXIX (1867) 1261

9 Hd. CXC (1868) 1218

10 Hd. CCVII (1871) 676

11 Hd. CCXIX (1874) 1654

12 Hd. CCXXIV (1875) 767

13 Hd. CCXXV (1875) 855-856

14 Hd. CCXXXIII (1877) 739

15 Hd. CCXL (1878) 1383 and 1379-1380

16 Hd. CCLIV (1880) 253

17 Hd. CCLXII (1881) 170

18 Ibid. 156

19 Hd. CCLXXIX (1883) 676

20 Hd. CCLXXXIII (1883) 398



what he may have regarded as its wrongful treatment of his father-in-law, de la Beche,<sup>1</sup> who died in the year that he entered Parliament, As a pottery manufacturer, this dislike, if this was its cause, would be fed by what he regarded as State interference in what should have been the private concern of "business men"

A.S. Ayrton (1816-1886) (Liberal M.P. for Tower Hamlets 1857-1874)

Ayrton returned from service as a lawyer in Bengal "with a modest fortune," and was called to the Bar before he entered Parliament. Within three years he was attacking "the friends of Brompton," and saying that "a few are using (the Museum) for their own purposes".<sup>2</sup> He moved a reduction on the estimates in the same year, when he contrasted "the extravagance at South Kensington with the starvation of the British Museum".<sup>3</sup> He launched a virulent attack on the Commissioners and the Department in 1863.<sup>4</sup> It was Ayrton who drew attention to the "black-face show", in 1864.<sup>5</sup> He assailed "the intrigues of the South Kensington party" the following year.<sup>6</sup>

As First Commissioner of Works in the first Gladstone administration, his "zeal for economy in the public interest"<sup>7</sup> made him a natural ally of Lowe. Cole must have feared the worst when the building programme became the responsibility of Ayrton's Department, and he believed that Ayrton was at the root of the opposition to the proper maintenance of the Bethnal Green Museum.<sup>8</sup> Ayrton was particularly disliked by Punch. It saw him as ignorant,<sup>9</sup> uneducated,<sup>10</sup> and an artistic Philistine,<sup>11</sup> a view with which the Art Journal agreed.<sup>12</sup> "Ayrton is led to think himself a great man in Art", Ripon told Cole,<sup>13</sup> and Huxley believed that he was "a cur, kicking up his heels because he thinks Gladstone is not out".<sup>14</sup> In August 1873 Gladstone transferred him to the post of Judge Advocate General, "because he deemed it prudent", and Ayrton lost his seat at the 1874 election. In the last year of his life, he suffered the ignominy of polling only 420 votes at Mile End.<sup>15</sup> Ayrton seems to have been a generally unpleasant character, whose dislike of the Department had no particular basis, save that of his own ignorance and prejudice.

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1 Dictionary of Welsh Biography

2 Hd. CLIX (1860) 728

3 Hd. CLXI (1860) 1547 and 1549

4 Hd. CLXXII (1863) 254-267

5 Hd. CLXXV (1864) 561-563 and Cole MS Diary 30 June 1864

6 Hd. CLXXVII (1865) 1559-1562

7 D.N.B.

13 Cole MS Diary 10 January 1871

8 Cole MS Diary 10 January 1871

14 MS letter Huxley to Hooker 6 August 1873

9 Pch. 20 November 1869

15 D.N.B.

10 Ibid. 27 November 1869

11 Ibid. 21 May 1870

12 Art J. September 1872



Augustus Smith (1804-1872) (Liberal M.P. for Truro 1857-1865)

Smith, lessee of the Scilly Isles and a land owner, had only a relatively brief period in Parliament, which reduced his effectiveness. His attacks on the Department were limited to a period of twelve months, but in that time he moved reductions on the estimates in two successive years, because of what he saw as "over-expenditure", thus sharing with Dillwyn, Labouchere and Dr. Clark the distinction of moving a reduction more than once. He moved two reductions in 1863<sup>1</sup>, and the 73 votes in 1864 was the highest figure recorded for such a motion. On this occasion, he pointed out that expenditure had more than doubled in ten years.<sup>2</sup> His opposition seems to have been based on purely personal grounds.

Sir William H. Gregory (1817-1892) (Liberal-Conservative, later Liberal M.P. for Galway 1857-1871)

Gregory was a public opponent, but a private friend, of the Department, and the objections he raised were usually made in a constructive spirit. He could, as Chairman of the 1860 Museums Committee, have been largely responsible for its "laudatory" Report. He believed that the estimates were presented in a confusing way,<sup>3</sup> and advised Cole to separate School and Museum assessments.<sup>4</sup> He thought that there was a danger that the Museum could become "a mere acquisition of objects"<sup>5</sup>. After warning Cole of the dangers inherent in the Universal Art Catalogue,<sup>6</sup> he moved a reduction on the estimates because of his dissatisfaction, after calling for correspondence on the subject.<sup>7</sup> As Governor of Ceylon from 1872 to 1877, he found time to write to Cole to offer his support in the fight against the scheme for the transfer of the responsibility for the Museum.<sup>8</sup> Although he was a trustee of the National Gallery, his objections would appear to have been constructive in their aim, and he was an ally of Cole's in a scheme to transport Cleopatra's Needle to Britain, and to set it up in the Museum forecourt.<sup>9</sup>

Edmund Potter (1802-1883) (Liberal M.P. for Carlisle 1861-1874)

Potter was a Manchester calico printer, "the largest in the world" as he proudly claimed,<sup>10</sup> whose interventions on behalf of the Manchester School of Art,

1 Hd. CLXXI (1863) 760 and 957

2 Hd. CLXXVI (1864) 560

3 Ibid. 557-559

4 Cole MS Diary 22 March 1865

5 Hd. CLXXVIII (1865) 1537-1546

6 MS letter Gregory to Cole 25 January 1867

7 Hd. CXCII (1868) 1870 and P.P. (1867) LV (367)

8 MS letter Gregory to Cole 26 November 1873

9 MS letter Gregory to Cole 29 July 1867

10 S.C.S.A. A. 2213



of which he had been a Committee member since its foundation<sup>1</sup>, have been recorded<sup>2</sup>. An ardent Free Trader, Potter was very much in favour of helping the poorer members of the community to obtain education, and he also believed that Art education, properly organised, would have good industrial influences.<sup>3</sup> He did not believe, however, that the Department's policy of "basic principles" was a correct one, and he also appears to have felt that he was fighting a lone battle in Lancashire. He warned Cole that he would give evidence to the 1864 Select Committee<sup>4</sup>, of which he was a member: his largely critical attitude there has been noted. Before an attack on the estimates in 1865, he told Cole that "nobody but himself understood the position"<sup>5</sup> but he went on to assail over spending on the Museum, said that the Schools of Art were "extravagantly conducted", that "not a quarter of their students are artisans", and that only half the masters who left the Central School went into teaching.<sup>6</sup> He was in favour of the setting up of a Ministry of Education<sup>7</sup>, but much opposed to "Parliamentary grants to those who can help themselves".<sup>8</sup> Potter was the father-in-law of Roscoe, and the grandfather of Beatrix Potter<sup>9</sup>. He appears to have been an objector in the classic mould of the Liberalism of the period, and he was probably more influential outside than inside the House.

Ralph Bernal Osborne (1808-1882) (Liberal M.P. for Chipping Wycombe 1841, Middlesex 1847-1857, Dover 1857-1859, Liskeard 1859-1860, 1860-1865, Nottingham 1866-1868, Waterford 1869-1874)

Osborne's opposition to the Department was brief, but marked. He said that he would "always resist these votes ... the people are essentially impalpable to Science and Art ... money is being poured into the pockets of people deriving a smug income". The Department, in his view, was "a conglomeration of everything from china to shipbuilding", and had tried "to monopolise everything".<sup>10</sup> He saw "the hand of the trusty Cole" in the Paris Exhibition purchases affair,<sup>11</sup> called the Department "a foundling hospital for people in snug berths", and talked of "profligate waste" and "shameful and monstrous" expenditure.<sup>12</sup> He seems to have been something of a fire-brand: Punch

1 J.G.Hurst Edmund Potter and Dinting Vale (Manchester Potter 1948) 32

2 Chapter VIII Section (b)(vi)

3 Hurst op. cit. 28

4 Cole MS Diary 7 April 1864

5 Ibid. 4 April 1865

6 Hd. CLXXVII (1865) 1164

7 Engr. 31 January 1868

8 Hd. CXCI (1868) 169

9 Hurst op. cit. 3

10 Hd. CLXXXIX (1867) 1234-1235

11 Hd. CLXXXV (1867) 891-893

12 Hd. CCVII (1871) 677-678



welcomed his return for Waterford, after he had failed at Nottingham, because there would now be "no fear of a dull session".<sup>1</sup> Disraeli once referred to him as "the member for ... I forget which one at the moment".<sup>2</sup> (His total number of constituencies, six, is probably a Parliamentary record). Osborne's opposition could have been caused by his disappointment at the refusal of the government of the day to allow the Department to buy his late father's Art Collection en bloc, in 1855.<sup>3</sup>

P. Rylands (1820-1887) (Liberal M.P. for Warrington 1868-1874 and Burnley 1876-1887.) (Eventually Liberal Unionist)

Rylands was a steel and iron-wire manufacturer, who confined his opposition to the Department to matters of finance. He said that there had been "gross neglect" in the Simkins affair,<sup>4</sup> called increasing expenditure "a grave public scandal" in 1877,<sup>5</sup> and queried the estimates for the new Dublin building in 1878.<sup>6</sup> In his view, estimates were again misleadingly presented in 1880.<sup>7</sup> In the following session, he saw a supplementary estimate as a "device to mask increased expenditure in undesirable directions,"<sup>8</sup> and queried the Dublin building accounts once more.<sup>9</sup> Rylands would appear to have been another classical Northern Liberal.

E. Jenkins (1838-1910) (Liberal M.P. for Dundee 1874-1880)

Jenkins, a barrister, also confined his objections to the financial field. He once described the accounts as "a Chinese puzzle".<sup>10</sup> In charging that accounts were "manipulated," he asked "how many bodies have found a ... resting place in that focus of genius?"<sup>11</sup> In suggesting a reduction, which he later withdrew, he alleged that the accounts were "always arranged to confuse," and six years after Cole's retirement, talked of "the celebrated Mr.(sic) Cole and his friends, who have been ordering South Kensington about for years, and scattering public money about in all directions".<sup>12</sup> (Jenkins held his seat as an "anti-Gladstone Liberal". He was later an unsuccessful Conservative candidate).

1 Pch. 5 March 1870

2 D.N.B.

3 Winslow Ames Prince Albert and Victorian Taste (London Chapman and Hall 1967) 122

4 Hd. CCXIII (1872) 399-400

5 Hd. CCXXXIII (1877) 743

6 Hd. CCXXXVIII (1878) 1541

7 Hd. CCLV (1880) 675

8 Hd. CCLIX (1881) 933

9 Hd. CCLXII (1881) 199

10 Hd. CCXXXIII (1877) 739

11 Hd. CCXL (1878) 1378-1379

12 Hd. CCXLVIII (1879) 1961-1964

Henry Labouchere (1831-1912) (Liberal M.P. for Northampton 1880-1905)

Labouchere, who inherited a fortune from his uncle, the Department's first political chief, was the editor of Truth, and "a rebel against constituted authority"<sup>1</sup>. Elected in 1865 for Windsor (of all places) but unseated on petition, he began to attack the Department within months of his eventual election. His main target was the Museum. This he described as "very badly managed"<sup>2</sup>. When he moved the first of his reductions, in 1883, he said that "they are always building there"<sup>3</sup>. Later in that session he declared his "primary objection to the existence of the Museum!" and called it "an old curiosity shop, with money wasted on idle and foolish purchases"<sup>4</sup>. He moved the second of his reductions in 1888, when he accused Bartley, who had also criticised the Department that year, of "running away", and he charged that there were "too many priests at the shrine who look after their own interests"<sup>5</sup>.

As the editor of Truth, Labouchere was one of the most prominent critics of the Royal Family, and the dislike was mutual. ("That horrible lying Labouchere" is attributed to the Queen, and "That viper Labouchere" to Albert Edward, Prince of Wales, by "Labby's" biographer.<sup>6</sup>) The Queen resisted his inclusion in the Cabinet<sup>7</sup>, although he was on quite good terms with her son at one time: his dislike of the Department could have stemmed from his connection of it with the "Royal influence" of past days.

John Burns (1858-1943) (Labour, later Liberal M.P. for Battersea 1892-1918)

Soon after he was elected as one of the first of the "working-men" M.P.s, Burns began to attack the Department. The Engineering section of the Museum, he believed, was "a scrap-heap"<sup>8</sup>. He wished the "dangerous Boilers" to be done away with<sup>9</sup>. His "nest of nepotism" speech, and his opposition as a member of the Museums Committee, have been recorded.<sup>10</sup> It is difficult to account for Burns' hostility, unless it might be that he saw the Department as typifying "privilege in high places". For one who, in his youth, had been noted for his "assiduous attendance at evening classes"<sup>11</sup>, his gratitude to the Department which probably made them possible was not marked.

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1 D.N.B.

2 Hd. CCLXII (1881) 210

3 Hd. CCLXXIX (1883) 671-672

4 Hd. CCLXXXIII (1883) 403-404

5 Hd. CCCXXX (1888) 1459-1461

6 Hesketh Pearson Labby (London Hamish Hamilton 1936) Title page.

7 D.N.B.

8 Hd. XII (1893) 1330

9 Hd. XXII (1894) 1075

10 Chapter V Section (g)

11 G.D.H. Cole John Burns (London Gollancz 1943) 14



Dr. G.B. Clark (1846-1930) (Liberal M.P. for Caithness 1885-1900)

Clark, a surgeon, proposed a reduction, which he later withdrew, in 1888, on the grounds that Scotland should have a Science College to match those in London and Dublin.<sup>1</sup> In 1889, he moved a reduction because "Scotland is neglected".<sup>2</sup> In 1894 he charged, wrongly, that there was "not a penny of assistance to the century old Glasgow College of Science".<sup>3</sup> He suggested, but withdrew, a reduction in 1897, again on the grounds of "neglect".<sup>4</sup> In 1898, increased costs of administration were attacked by him.<sup>5</sup> Even though the Department's Scottish functions had by then been transferred to the Secretary for Scotland, he moved the second and last of his reductions in that year.<sup>6</sup> While Irish, Welsh, and other Scots members complained from time to time of "neglect", Clark was the most consistently critical Member on this point.

J.H. Yoxall (1857-1925) (Liberal M.P. for Nottingham West 1895-1918)

Yoxall was a schoolmaster and a former President of the N.U.T., and its General Secretary from 1892 to 1924, receiving a knighthood for his services in 1911. His major criticisms of the Department were levelled at its administration, particularly in its dealings with local authorities. "Rivalry" with the Education Department, and the charge that the Department, against which there were "grave objections", was "more criticised than any other Department of State", were accusations made by him in 1896.<sup>7</sup> In 1897 he wished the Directory to be presented to Parliament,<sup>8</sup> queried the interpretation of Clause VII,<sup>9</sup> and "rejoiced" at the transfer of Drawing to the Education Department.<sup>10</sup> The position of higher grade schools,<sup>11</sup> and relations between School Boards and Technical Education Committees<sup>12</sup> were questioned in 1898, and he claimed that the Department was "making a last despairing effort to retain central control".<sup>13</sup> He even found time to query the conditions of employment of a headquarters typist.<sup>14</sup> Yoxall's part in the events leading up to the setting up of the Committee on the Museums, and his hostility as a member of that Committee, have been detailed.<sup>15</sup>

1 Hd. CCCXXX (1888) 1442

2 Hd. CCCXXXIX (1889) 1387

3 Hd. XXIX (1894) 90-91

4 Hd. LI (1897) 1550

5 Hd. LXIV (1898) 359

6 Ibid. 371-372

7 Hd. LXII (1896) 1289

8 Hd. XLIX (1897) 367

9 Ibid. 502

10 Hd. LI (1897) 1557

11 Hd. LII (1898) 1208

12 Hd. LV (1898) 734

13 Hd. LXIV (1898) 353

14 Hd. LXXI (1898) 594-595

15 Chapter V Section (g)



He was also a member of the Secondary Education Commission, and was no doubt partly responsible for its general condemnation of the Department. He may have been motivated in his opposition by memories of the Goffin case, but it is much more possible that, like his colleague Gray, he felt that he was representing the best interests of the members of his Union by opposing the Department.

ii) Conservatives

R. Spooner (1783-1864) (Conservative M.P. for North Warwickshire 1844-1864)

Spooner, a banker, was one of the few consistent Conservative critics. The purchase of the Kensington estate was queried by him: he alleged that there was "jobbing everywhere," and asserted that "persons ought to instruct themselves".<sup>1</sup> In 1857, he argued that expenditure was being supported by "the class of the community whose prospects of receiving any advantage are very remote", referred to "fancies which begin in high quarters", and believed that the government "would be pleased to see these receive a check". He was the only Conservative ever to move a reduction on the estimates because of dissatisfaction with the Department, which he did, with Dillwyn, on this occasion.<sup>2</sup> Later, he was one of the chief objectors to "the nude study" as "an objectionable practice".<sup>3</sup>

Henry Drummond (1786-1860) (Tory: M.P. for West Surrey 1847-1860)

Drummond, a banker and economist, was a "man of fine qualities and capacities", but he was also "sharp, classic, haughty ... (with a) disorderly force of intellect and character (and) an insatiable love of shining and figuring". He was "well nigh cracked by an enormous conceit of himself" and he "shot fiery arrows about ... but they told nowhere".<sup>4</sup> "A Tory of the old school", he was "perfectly independent, scarcely pretending to consistency ... attacking all parties in turn".<sup>5</sup> He opposed the Kensington purchase scheme as "a crude speculation... (part of) attempts to force the population into tastes for fine Arts not given them by Nature".<sup>6</sup>

In 1854, the "whole scheme" of the Department was, in his view, a "rank imposture ... like the Education vote, it is part of the monomania of the day".<sup>7</sup>

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1 Hd. CXXIII (1852) 1032

2 Hd. CXLVI (1857) 574-576

3 Hd. CLV (1859) 372

4 Carlyle (ed. J.A.Froude) Reminiscences (London Longmans Green 1881) I 297 and 312

5 D.N.B.

6 Hd. CXXIII (1852) 1030

7 Hd. CXXXIV (1854) 1006-1007

While he quite approved "of teaching mechanics to copy geometrical solids, or anything else of which the accuracy can be determined, it is far different with what is queerly called freehand drawing of twigs and leaves and tendrils".<sup>1</sup>

Drummond's opposition must be put down to his basically critical nature and, possibly, to his belief in the importance of independent personal development, which was reflected in his membership of the Irvingite sect.<sup>2</sup>

E. Gray (1857-1932) Conservative M.P. for West Ham North 1895-1906,  
Accrington 1918-1922

Gray was, like Yoxall, a schoolmaster and former N.U.T. President, and he was the Secretary of its Education Committee until 1925, receiving his knighthood in 1915, four years after Yoxall. His criticisms paralleled those made by his colleague. In 1897 he queried the issue of a Circular which "threatened loss of grant",<sup>3</sup> said that there was no Parliamentary sanction for Clause VII,<sup>4</sup> and charged that capitation payments were inadequate.<sup>5</sup> In 1898 he pointed out that the Department had made contradictory interpretations of grant regulations,<sup>6</sup> and feared that it "still wishes to control secondary education".<sup>7</sup> As was Yoxall, he was a critic and member of the Museums Committee, and based his objections on what he saw as his functions as a teachers' representative.

e) The overall pattern

i) "Trial" by Committee and Commission

References have been made throughout the work to the views of Select Committees of the House of Commons, and of Royal Commissions. An attempt will here be made to place these bodies in chronological perspective. The "laudatory" views of the Select Committee on Museums in 1860<sup>8</sup> were in contrast to the generally critical opinions and recommendations of the Select Committee on Schools of Art, which sat in 1864.<sup>9</sup> The Paris Exhibition of 1867 was an occasion for the renewal of suspicions. "The Treasury clerks say that the Treasury is well disposed towards us, but that they are afraid of the House of Commons", Cole noted.<sup>10</sup> The Exhibition arrangements, for which it was responsible, did not begin auspiciously for the Department. Cole wrote an

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1 MS letter Drummond to Cole 10 April n.d.

2 D.N.B.

3 Hd. XLV (1897) 1041

4 Hd. XLI (1897) 1553-1556

5 Ibid. 1559

6 Hd. LIV (1898) 1507-1508

7 Hd. XLIV (1898) 357-358 and 364

8 Hd. CLIX (1860) 724-728 and P.P. (1860) XVI (527)

9 P.P. (1864) XII (187)

10 Cole MS Diary 8 January 1867



injudicious letter to the Times which suggested a much greater involvement than his political chiefs had expected.<sup>1</sup> This caused a "hubbub,"<sup>2</sup> but Cole was exonerated by Buckingham and Corry.<sup>3</sup> Questions in the House, because of fears that a vote for purchases from the Exhibition for the enlargement of the Department's collections would be wrongly used,<sup>4</sup> led to the setting up of a Select Committee<sup>5</sup> which Cole saw as "the new Frankenstein".<sup>6</sup> The vote was allowed after Huxley, Redgrave, Donnelly and Cole<sup>7</sup>, among others, had been examined, and a body of Royal Commissioners for the Exhibition was created.<sup>8</sup> Even a year later, his new chief, Marlborough, advised Cole not to ask for a supplementary vote, as it was "best at the present stage not to give any ammunition for an attack".<sup>9</sup> Once more the storm was weathered, as Cole was later told that "the Committee is now in favour of the purchases".<sup>10</sup>

The Select Committee on Scientific Instruction, which sat in 1868, included three critics in its Chairman, Samuelson, and two other members, Potter and Dixon. It was not over-enthusiastic in its praise.<sup>11</sup> Its successor, the Royal Commission on Scientific Instruction,<sup>12</sup> was much more generous in its tributes, as was the Royal Commission on Technical Instruction.<sup>13</sup> The "Simkins affair" resulted in some censure of the Department and its officials by the Committee of Public Accounts,<sup>14</sup> but in the "Goffin case" the Department's actions were upheld.<sup>15</sup> The Select Committee on Administration recommended that there should be no basic changes of function or structure.<sup>16</sup> It was at the very end of the Department's life that criticisms became so marked that parliamentary bodies were factors in the termination of its existence. The Royal Commission on Secondary Education<sup>17</sup> was the real "death blow": the Museums Committees of 1897 and 1898<sup>18</sup> only helped to administer the coup de grace.

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1 Times 2 March 1867

2 Cole MS Diary 4 March 1867

3 Ibid. 8 March 1867

4 Hd. CLXXXV (1867) 891-898

5 P.P. (1867) X 433

6 Cole MS Diary 23 March 1867

7 Ibid. 9 July 1867

8 P.P. (1868-69) XXIII

9 MS letter Marlborough to Cole n.d. (1868? Marlborough did not become Lord President until that year)

10 MS letter Marlborough to Cole 28 July n.d. (1868?)

11 P.P. (1867-1868) XV(I)

12 P.P. (1872) XXV, (1873) XXVIII, (1874) XXII, (1875) XXVII-XXVIII

13 P.P. (1882) XXVII (653), (1884) XXIX-XXXI

14 P.P. (1872) VII (I)(V-109)

15 P.P. (1878-1879) X

16 P.P. (1883) XIII, (1884) XIII

17 P.P. (1895) XLIII-XLVII

18 P.P. (1897) XII and (1898) XI

ii) Reasons for consistent unpopularity

There can be little doubt that the Department's unpopularity with Parliament, which was a fairly consistent feature of its career, was exacerbated by the attitude it showed to criticisms: the way in which the recommendations of the 1864 Committee were virtually ignored is the most outstanding example of this. The generally satisfied air shown by its witnesses to such bodies, based no doubt on correctly held views of their own competence, cannot have helped in the improvement of relations. (It will be remembered that Cole gloried in the description of "being the only man the House ... cannot keep in order".) The Department was, admittedly, an easy target. While it controlled less expenditure, and employed fewer people, than its sister Department, its activities entered into many more fields, and these were usually fraught with possible controversy. Its officials were usually more "public" figures who held strong views which they were not afraid to express. Its activities affected the lives of adults as adults: the Education Department's field was one which, while it was vital for the development of "the next generation", had never been notable for controversy on method, as distinct from organisation. The lack of Parliamentary control, over Inspection, Directory, and general regulations, enjoyed by the Department, while it aided its freedom to develop its activities, also helped to increase its unpopularity with the legislators. In the general circumstances, it is perhaps surprising that so much was achieved.



## CHAPTER FOURTEEN

## THE MANUFACTURERS

- a) Reasons for lack of co-operation
  - i) Fears of state interference
  - ii) Doubts on the value of "theoretical" studies
  - iii) Other factors
  
- b) Factors causing changes of attitudes

a) Reasons for lack of co-operation

i) Fears of state interference

The Department had a long and hard task in convincing the manufacturers that its services were of value in the field of economic development. It has been seen that one basic cause of Parliamentary opposition, particularly among the Liberals,<sup>1</sup> was the belief that the state had no right to interfere in industrial affairs. "The government has no business to meddle in the technicalities of manufacture ... it is not the business of the manufacturer to go beyond the taste of the public", argued Potter,<sup>2</sup> and he spoke for many. This feeling was particularly strong in the Liberal strongholds of the West Riding of Yorkshire. The opposition of Baines has been noted.<sup>3</sup> "Yorkshire is jealous of interference, Lancashire is not", believed Donnelly, and he quoted a case where a Yorkshire Mechanics' Institute had refused aid on Mechanical Drawing because it feared that Departmental control would extend to all its activities.<sup>4</sup> "A few influential gentlemen there always throw a wet blanket over everything which has the assistance of the State", J.C. Buckmaster agreed.<sup>5</sup> Sales, of the Yorkshire Union, seemed almost proud of the Yorkshire scarcity of science classes in 1868,<sup>6</sup> but he suggested that Lancashire, another Liberal fortress, was more willing to accept help because of the "missionary work" of Kay-Shuttleworth in that area.<sup>7</sup> This "foolish opposition" was, however, thought to be "dying away" at the time that the Samuelson Committee met.<sup>8</sup>

ii) Doubts on the value of "theoretical" studies

"Manchester manufacturers do not support the School of Art because they see no profit developing from its use", Potter argued in 1864,<sup>9</sup> and, on scientific training, he commented in 1868 that "chemists are freely available, anyway, at £100 per annum".<sup>10</sup> No harm would come to industry if classes were entirely withdrawn, believed a glass manufacturer, at that time.<sup>11</sup> The decline in the manufacturers' subscriptions to Art Schools had become "a serious

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1 Illingworth, Potter, Baines and Caldwell were all connected with textiles, Dillwyn was a pottery manufacturer, and Samuelson and Rylands were in iron and steel.

2. S.C.S.A. A. 2326

3 Chapter XIII Section (c)

4 S.C.S.I. A.550

5 Ibid. A.8228

6 Ibid. A.5015

7 Ibid. A.5073

8 Ibid. AA.4074-4086 (Ripley of Bradford) A.8228 (J.C. Buckmaster)

9 S.C.S.A. A. 2345

10 S.C.S.I. A. 567

11 Ibid. A. 6071 (Chance)



matter" by 1870.<sup>1</sup> While manufacturers were divided in their opinions on this point before the Technical Instruction Commission,<sup>2</sup> specific criticisms, by employers, of Art instruction, were raised in 1884. "The system takes all the brightness out of a man", it was charged. "Our expensive schools, doing little to improve manufactures ... hundreds of designs (for wallpaper) and not one acceptable", were other comments quoted.<sup>3</sup> This feeling of under valuation was declining, Donnelly believed at that time, but he thought that to quote individual "success stories" would not help, and he added that, in his opinion, manufacturers would only be convinced if they could see that progress had been made by foreign countries who valued such training.<sup>4</sup>

iii) Other factors

A most potent, if rarely publicly expressed, fear was that their trade secrets would be divulged if manufacturers allowed their employees to attend classes with workers from rival concerns. He had been "roundly attacked" in the North by one Local Committee "for intervening in the details of manufacture" when he was trying to promote the Society of Arts' technological examinations, said Donnelly. He had been told by one Local Committee that it "would not encourage anything which would bring the workmen of a district together ... to discuss matters in which trade secrets were involved ... and would do everything to stop the scheme". "A large manufacturing friend",<sup>5</sup> when approached for advice, had "most strongly deprecated such action", he added.<sup>6</sup> This "dread of secrets being secrets no more, if taught by government Professors", was also referred to by Sparkes, but he believed that such fears were on the decline.<sup>7</sup>

Employers also feared that if they assisted a particular School with subscriptions, that they might be indirectly assisting competitors who gave no such support. The Potteries School of Art had had its deficit guaranteed by Mintons, but an annual subscription of only £50 was then made instead, "because it was not fair to support the workmen of others".<sup>8</sup> In the earliest years, it was a common belief, in Sheffield, that "once designers are produced, they are lost to others".<sup>9</sup> "Once trained, they leave the district", said a Sheffield

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1 Art J. April 1870

2 Chapter VII Section (d)(iv)

3 Art J. July 1884 (A. Harris)

4 R.C.T.I. A. 2871

5 Whitworth?

6 R.C.T.I. A. 2862

7 Ibid. AA. 1202-1203

8 S.C.S.A. AA. 4027-4031 (Hollins)

9 Art J. August 1865

industrialist<sup>1</sup>, and he thus echoed an earlier view of a Bradford merchant<sup>2</sup>. Establishing a Science School "for others to reap the benefit" was ridiculed by a Leeds employer, who added, tellingly, "We do not do that in Yorkshire"<sup>3</sup>. The argument that industry, and the country in general, would receive benefit, would have meant little to such opponents.

b) Factors causing changes of attitudes

The effects of the movement for Technical Instruction, which developed after the Paris International Exhibition of 1867, have been noted in several sections of the work. As early as 1868, some manufacturers were openly in favour of technical training. The "products of the Science Schools" were welcomed by a Manchester manufacturer, who said that he would keep his School entirely at his own expense if there were no Department aid.<sup>4</sup> The value of scientific training in the Bradford dyeing industry<sup>5</sup> and in the Manchester chemical industry<sup>6</sup> also received favourable comment. The School at Elswick-on-Tyne organised by Lord Armstrong was in a thriving state, as Annual Reports reveal, although its promoter could still doubt its popularity among the bulk of his employees.<sup>7</sup> Refund of the fees of successful students was offered by a Hartlepool employer.<sup>8</sup>

The fact that the "operative classes" valued instruction much more than did their employers was commented upon by Donnelly before the Technical Instruction Commission.<sup>9</sup> There is little doubt, however, that the great increase in the numbers of students both in Art and in Science,<sup>10</sup> as the century progressed, shows that while employers may not have been over-helpful, they did not hinder, and this increase would suggest that they were prepared to give preference for promotion to successful students. The gradual development of "applied" classes in both spheres, also served to remove the opposition on the grounds of the worthlessness of "pure theory". Opposition to the idea of state aid to education had not vanished, but had greatly diminished, by the end of the century. The debate then was about the form the aid should take, and on the efficiency of the administration of the Department which had the responsibility in this particular sphere.

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1 R.C.T.I. A. 7729 (Withers)

2 R.C.S.I. A. 6267 (Miall)

3 S.C.S.I. A. 4922 (Kitson)

4 Ibid. AA. 5788 and 5843 (Mather)

5 Ibid. A. 4037 (Ripley)

6 Ibid. A. 6082 (Rumney) and AA. 1809-1825 (Richardson)

7 N.C. November 1888

8 Engr. 4 October 1889

9 R.C.T.I. A. 2864

10 Tables IV and XVIII



## CHAPTER FIFTEEN

## THE PRESS

- a) Introduction
- b) The Art Journal
- c) The Magazine of Art
- d) The Athenaeum
- e) The Engineer
- f) Engineering
- g) Nature
- h) General evaluation

a) Introduction

Six periodicals of the period have been taken as the principal sources of information on the contemporary opinion of the Department and its activities, and comments from these sources have been quoted throughout the work. An attempt will now be made to account for the attitude taken up by each of these journals at varying periods.

b) The Art Journal

Founded in 1839 as the Art Union Monthly, this periodical received its final title in 1849. The Editor from its inauguration until his retirement in 1880 was S.C.Hall, and he was at one time the principal proprietor. The Journal covered the whole field of Art. It was almost invariably hostile in the first sixteen years of the Department's existence. Its opposition was based on its marked dislike of Henry Cole. Its queries on his suitability for his initial appointment, its descriptions of him as lacking in knowledge, taste and experience, its insinuation that his "Felix Summerly" ventures had failed, and its allegation that he had "pocketed" sums from the Great Exhibition, have been recorded. He was later described as "a dictator lacking in knowledge of the needs of the manufacturers"<sup>1</sup>, and "jobbery" was implied in his connection with the Royal Horticultural Society.<sup>2</sup>

It must be recorded that the Journal was used by the Consort to publicise his own efforts to "improve the nation's taste": engravings of the works in the Royal collections were frequently printed in its pages, sixteen successive annual volumes were dedicated to the Prince,<sup>3</sup> and it defended him, as has been seen, against the attacks of Members of Parliament.<sup>4</sup> There was some lessening of virulence against the Department in the last years of Albert's life, but attacks were renewed on his death: the Journal's support of the Art teachers in 1864, of Robinson at the time of his quarrels with the Department, and of the Female School when it was forced into independence, have been noted.

The hostility of this period was probably founded on the fact that Hall saw the Department as an instrument in a plot to reduce the influence of the Art Unions. Since that movement was intentionally nation-wide in its activities, the Journal was always "against anything done at the expense of the provinces".<sup>5</sup>

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1 Art J. February 1855

2 Ibid. June 1864

3 Winslow Ames op. cit. 120, 168, 175 and 116, 167, 207

4 Chapter XIII Sections(b)(ii) and d(i)

5 Art J. August 1854



There was also a fear, which has been detailed, that the Department was "forcing Science at the expense of Art".<sup>1</sup> The evidence given by Cole and Redgrave on the Art Unions in 1866 would not further endear the Department to Hall. There was, however, no pressure from the officials to use any powers against the Art Unions. (The Vice-President, Montagu, said that he "would think about a Bill when he had the leisure", when he was pressed to bring the Unions under the Department,<sup>2</sup> but such an Act was never passed.) "Hall now agrees to let bygones be bygones", Redgrave told Cole in 1868.<sup>3</sup> The Journal's tone improved notably until Hall's retirement: the tributes to Cole on his departure, with the sly dig at his "finding posts for his grandchildren", have been noted.

From the time of Hall's retirement, no major assaults came until the very end of the period. Reference has been made to the charge of the "absence of any results" from the Art teachers' work" in the 1880's, but there were generally favourable comments on the general improvements in the designs submitted for the National Competitions. The Journal's return to its old ways with the appointment of the Museums Committee in the century's last years has, however, been recorded, although it does not appear to have taken any part in the campaign which led to the appointment. It is notable that no congratulations were offered to Donnelly on his retirement. The Journal had thus returned to the critical position of its early years. It would have been interesting to see how its criticisms would have developed if the Department had not ceased to exist. (The Journal's own career came to an end in 1912.)

#### c) The Magazine of Art

This monthly periodical covered much of the same ground as the Art Journal. Founded in 1878, it was not particularly critical of the Department for most of its early years. It was in its pages that Alan Cole's articles on lace appeared, as did the tribute to the Department's part "in training some of the foremost of the younger artists of the day",<sup>4</sup> and Alma Tadema's defence on its contributions to "Art and Industry".<sup>5</sup> Reference has been made to the markedly critical article on "Art and the Board School".<sup>6</sup> In 1895, however, as has been detailed, the magazine began the series of virulent attacks which were part of the campaign which led up to the establishment of the Museums

1 Art J. January 1864

2 Hd. CLXXXVI (1867) 815

3 MS letter Redgrave to Cole 3 November 1868

4 M. of A. 1879-1880 262

5 Ibid. 1892-1893 8-10

6 Ibid. 1885 218



Committee. It has not been possible to find information on either M.H.Spielmann or C.H. Becker, the authors of the attacks, but there is a strong possibility that they influenced, or were influenced by, such figures in the Art world as Robinson and Balcarres.

d) The Athenaeum

This periodical, which covered the whole field of the Arts, Literature and Science, had been in existence for over a quarter of a century before the Department's foundation. Comment on the Department's activities in its early years was invariably favourable. Cole's "common sense principles" in his November 1852 Address were applauded, the journal wished well to the Schools of Art,<sup>1</sup> said that the 1859 Science scheme has "got off to a good beginning",<sup>2</sup> and made very favourable reviews of the whole system in 1862.<sup>3</sup> (It has been noted that the Athenaeum was probably responsible for the hated "Boilers" epithet.<sup>4</sup>) This favourable tone is accounted for by the fact that the principal owner of the periodical, until his death in 1864, was Charles W. Dilke, who was over a long period a friend and associate of Henry Cole. They worked together on the Great Exhibition, and there are frequent references in Cole's Diaries to "dining at Dilke's". Cole wrote many articles for his friend's publication, chiefly on Architecture, and Playfair also made contributions.<sup>5</sup> T.K. Hervey, who succeeded Dilke as Editor in 1843, and W.H. Dixon, who became the Editor in 1853, took over the favourable attitude of the proprietor. Dixon has been described as "allowing his likes and dislikes ... to govern the comment" of the periodical.<sup>6</sup> He was known to Cole, and in 1860 introduced a Mr. Stephens to "The King of South Kensington".<sup>7</sup>

With the succession to the ownership of the founder's grandson, Sir Charles Dilke, the journal took on a "more liberal and radical tone" under its Editor from 1870 to 1901, Norman MacColl, to whom much of the policy and conduct was left by the new proprietor.<sup>8</sup> This was reflected in a changed attitude to the Department, and for the rest of the century the periodical was almost invariably in opposition. Assaults on the scheme to move the School of Mines to South Kensington, on the voluminous detail of the Reports, and on the

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1 Ath. 4 December 1852

2 Ibid. 11 February 1860

3 Ibid. 4 January, 3 August and 25 October 1862

4 Chapter IX Section (c)(v)

5 L.A. Marchand The Athenaeum: A Mirror of Victorian Culture (Chapel Hill, University of North Carolina Press 1941) 224, 53, 226.

6 Ibid. 80-81

7 MS letter Dixon to Cole 2 October 1860

8 Marchand op. cit. 82, 92.



"limited value" of the Science collections, have been recorded. While the Athenaeum did not join in the almost universal chorus of vituperation at the time of the appointment of the Museums Committee, and, as has been noted, offered some defences for the Department, the attitude it showed in the last, and greater, part of the century, was in very great contrast to the tone which prevailed in the earliest years.

e) The Engineer

The periodical was founded in 1856, just three years after the Department, and for the first years of its existence it adopted a reasonable tone. Its concern with the slow rate of growth of the science scheme before 1859, its fears of "acquisitiveness" by the Museum officials, and its doubts on the value of the loans system, have been recorded. No sides were taken during the Art teachers' dispute, but really serious criticism began in 1868. It was suggested that Cole was using the Society of Arts as a personal tool. "The aggrandisement of the South Kensington clique ... the encrusted jobbery of twenty years ... the Museum, a Noah's Ark of misdirected energy", were all assailed.<sup>1</sup> Reference has been made to the particularly bitter opposition to the scheme for the transfer of the School of Mines: the "villains" were "Mr. Cole ... and Captain Donnelly" and there was more talk of "mischievous jobbery".<sup>2</sup> The Department was seen as "self-dubbed ... its Science a sham, and as for its Art ..."<sup>3</sup> It had "jobbed with public moneys", and there was a "continually swelling tide of underworking influence".<sup>4</sup> An "artistic and scientific monster", which had "reduced Schools of Art to a dead level of mediocrity", it had "set its evil eye on the School of Mines".<sup>5</sup>

The virulence died down, but there could still be charges of "excessive interference by the State", and "centralisation".<sup>6</sup> The Department was believed to be "wholly unsound", and had "squandered its money" in 1876.<sup>7</sup> Criticisms of the Science Loan Exhibition have been noted, as have objections to specific examination papers. "Despite criticisms, progress in Science teaching" had to be 'admitted' in 1882, but the characteristic comment was added that the cost had

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1 Engr. 5 August 1870

2 Ibid. 12 May 1871

3 Ibid. 19 April 1871

4. Ibid. 2 June 1871

5 Ibid. 1 September 1871

6 Ibid. 17 January 1873

7 Ibid. 13 October 1876



been "enormously disproportionate to the work done".<sup>1</sup> The severe references to the Department's "underground influence", and the leading part played by the Engineer against an extension of its powers, at the time of the attempts to put through an effective Technical Instruction Bill, have been recorded. In the last decade of the century, while criticisms of the Department were restricted to the field of its examinations, the general tone of the journal showed that it was against "scientific education for workmen". Its last fling was a charge that the struggling Imperial Institute was a "South Kensington job",<sup>2</sup> but it was surprisingly restrained at the time of the "Museums scandal".

In 1878, its contemporary and rival, Engineering, said that it was "well known" that the Engineer was "opposed to Science and Art teaching at all times".<sup>3</sup> It is most significant that the journal made almost no references to the development of the movement for technological examinations. This attitude was possibly due to the personal experience of its editor from 1865, Vaughan Pendred. Born to an impoverished family of Irish landowners in 1836, he received no formal schooling, and "made his way in the world alone".<sup>4</sup> He served for a time in a Staffordshire iron-works, and, having made himself known to Zerah Colburn, succeeded him as Editor. At his death, he was described as "having secured a permanent truce between theorists and practical men",<sup>5</sup> but his own experience seems to have embittered him and to have caused his attacks on "state aided education". (He was succeeded as Editor by his son, who, in turn, handed over to his son, who edits the journal today.<sup>6</sup>)

#### f) Engineering

Founded in 1866, the journal made relatively few comments on the activities of the Department, and these were usually favourable, until its publication of the series of attacks by George Halliday, to which reference has been made, in 1889. The criticisms of the examinations in the last decade of the period have also been noted, but in 1894 it said "at least the system is founded on the right lines ... only a few of the examinations are bad".<sup>7</sup> In 1897, the journal gave particular praise when it talked of "the present highly satisfactory arrangements for the teaching of Science ... due in very great

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1 Engr. 18 August 1882

2 Ibid. 15 April 1898

3 Engg. 3 May 1878

4 Times 15 October 1912 (Obituary)

5 Ibid. 16 October 1912

6 Letter from Mr. B. W. Pendred 2 October 1967, and centenary edition of Engr. January 1956.

7 Engg. 2 November 1894



measure to the action of the Department".<sup>1</sup> Only one comment was made at the time of the enquiries of the Museums Committees, and that a very disparaging one, which has been noted. In the last year of the Department's existence, the journal was "still afraid of cram" but believed that the examinations were, in general, "of a high character".<sup>2</sup>

Engineering was founded, with financial assistance from Bessemer, by the brilliant but erratic American, Zerah Colburn, who had served on the staff of the Engineer from 1858, and had been its Editor from 1860 to 1864. When he returned to the U.S.A., there to commit suicide in 1870, the paper was taken over by his Assistant Editor W.H.Maw, who acted as joint Editor with James Dredge, and they were later joined by A.T.Hollingworth, as proprietor, all three becoming joint proprietors in 1876.

Colburn was a Fellow of the Society of Arts, and read two papers to the Society in 1865, while Maw was a member of its Council, and, in the last ten years of his life, which did not end until 1924, acted as Treasurer. Dredge, who died in 1906, also served on the Council of the Society. Colburn would therefore have known Cole, and Dredge and Maw might have known him, but would certainly have known Donnelly very well.<sup>3</sup> How far this would have affected their treatment of the Department's activities must remain a matter for conjecture, but, as has been noted, the periodical adopted a remarkably favourable tone in contrast to the Engineer, and its reference to the Department's officials at the time of the "Museums scandal" must be taken as an aberration in the heated atmosphere of the time.

g) Nature

Founded by Norman Lockyer, with the co-operation of Alexander Macmillan, in 1869, and edited by Lockyer until within a few months of his death in 1920, this magazine of Science, in its varied aspects, had only a few comments on the activities of the Department until 1875. These were generally favourable, although minor criticisms of examinations and teachers' pay have been noted. In 1875, Lockyer took up his work under the Department, and he served both as Professor of Astronomy at the Normal School and as the chief researcher and member of the Solar Physics Committee. From that point, references to the

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1 Engg. 26 February 1897

2 Ibid. 6 October 1899

3 Material on Colburn, Maw and Dredge from the centenary issue of Engg. 31 December 1965.



Department are unfailingly favourable. Cole received especial praise in that year, when the Department was described as "one of the most important scientific organisations in this or any other country",<sup>1</sup> and the International Loan Exhibition was strongly defended in 1876. In 1878, "the system of Science and Art education created at South Kensington", it was said, had "done probably more to foster a wide-spread art taste and desire for scientific knowledge among the people than any other body".<sup>2</sup> The Department was defended against "the dregs of society's sneers and clap-trap denunciation",<sup>3</sup> and there was a posthumous tribute to "the enormous development due to Sir Henry Cole".<sup>4</sup> Congratulations on the Directory,<sup>5</sup> and a "highly satisfactory Report",<sup>6</sup> in the last decade were followed by a tribute in the last year to "the activities of vast extent" of the Department.<sup>7</sup> The journal took no part in the "Museums scandal", but its tribute to Donnelly's fortitude in the face of the charges at the time, has been recorded.

Lockyer's work with Donnelly on the Solar Physics Committee has been noted. "Their deep and lasting friendship" was commented upon by Lockyer's daughters.<sup>8</sup> After Lockyer's wife died, the Professor and the Secretary, who was still a widower, travelled abroad.<sup>9</sup> Lockyer was a member of the Athenaeum Club,<sup>10</sup> and his part in Donnelly's eventual election has been noted.<sup>11</sup> As the leading scientific journal of its time, the favourable views put forward by its Editor, Donnelly's friend, must have stood the Department in good stead. It must, however, be noted that Nature was a "pure science" journal: the less favourable views of the "applied science" publications have been recorded.

#### h) General evaluation

Thus, of six major periodicals of the day, Nature was invariably on the side of the Department, and Engineering and the Athenaeum were so for most of the time, the latter especially in the important formative years. The Engineer and the Art Journal were usually in opposition, and the Magazine of Art was particularly critical at the end of the period. It is a matter

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1 Nat. 15 July 1875

2 Ibid. 23 May 1878

3 Ibid. 13 April 1882

4 Ibid. 5 July 1883

5 Ibid. 29 July 1886

6 Ibid. 3 February 1887

7 Ibid. 17 August 1899

8 T. Mary Lockyer and Winifred M. Lockyer Life and work of Sir Norman Lockyer  
(London Macmillan 1928) 183

9 Ibid. 109

10 Ibid. 104

11 Chapter VII Section (a)(xii)



for conjecture on how far the greater status of Nature and the Athenaeum would carry weight with those who could influence the Department's development. The often malicious attacks of the other journals must have been affairs of some personal concern to the officials of the Department.

**CHAPTER SIXTEEN****THE RELIGIOUS QUESTION**

- a) **The possibility of sectarian objections**
- b) **The "nude"**
- c) **The beliefs of the officials**
- d) **The Aveling case**



a) The possibility of sectarian objections

It has been seen that the possibility of objections from the supporters of organised religion was a factor in the initial placing of the Department under the Board of Trade, and that the belief that such resistance was not then likely to arise was one reason for the transfer to the Lord President in 1856.<sup>1</sup> (Murchison advanced fears of involvement in sectarian difficulties as an argument against the transfer of his School of Mines with the rest of the Department,<sup>2</sup> but these objections were obviously ignored.) After the transfer, politicians and officials were still careful to avoid any involvement in sectarian problems. "Lord Granville and Lowe objected to a clergyman who had become a priest as bad manners"; Cole noted in 1859.<sup>3</sup> Although he added no more, this could be taken to refer to a consideration of the appointment of Pollen, Thackeray's friend, as an Inspector. Pollen had become a convert to Roman Catholicism, and given up his Anglican orders: he obtained a less "public" appointment with the Department, as has been recorded.<sup>4</sup> There was some opposition from Roman Catholic Training Schools to the visits of Department Inspectors in 1860. It had been overcome, Donnelly believed, and one College had withdrawn its objections, due to the intervention of the Bishop of the Diocese.<sup>5</sup> Granville "declined to admit the principle of a Catholic Inspector, or anything which sanctioned sectarian instruction ... but if there was a Catholic Inspector who could without inconvenience be sent, it would be arranged, on the distinct understanding that it was not to be considered a precedent."<sup>6</sup> Cole must even have raised the question of a nun attending the Central School of Art, since he was told "Lord Granville has no objection to the appearance of a nun in full canonicals".<sup>7</sup>

In fact, the early days of the development of the Department were notable for the fact that local clergy gave full support. Of the 153 Science classes in existence in 1865, 45 clergymen were Secretaries or Chairmen of Local Committees, and of 84 Schools of Art in the same year, 29 clergymen held similar positions.<sup>8</sup> (H.G. Wells later suggested that the system of "honorary certification" was a device to secure their aid.<sup>9</sup>) The study of science held

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1 Chapter II section (c)(i)

2 P.P. (1856) LV (475)

3 Cole MS Diary 15 August 1859

4 Chapter III Section (c)(i)

5 MS.M 12.119 (29 November 1860)

6 MS letter Granville to Cole 19 November 1860

7 MS letter Bruce to Cole 11 September 1863

8 D.S.A. 13th Report 40-47, 76-126

9 H.G. Wells The New Machiavelli 25



no fears for the very influential clergyman, the Reverend James Booth,<sup>1</sup> who argued strongly for its development five years before the Great Exhibition. He pointed out "dreadful deficiencies at all levels", and argued that "our very existence as a Nation" depended on "the advancement of Science and the Arts", in the face of the "senile apathy" which existed.<sup>2</sup> He later proposed a system of examinations<sup>3</sup> which would be linked with confirmation classes, and which would require a character reference from a clergyman before entry.<sup>4</sup>

There were no "sectarian problems" in at least one Irish School of Art. "All creeds" were represented on the Cork Committee, and "no differences" had "ever arisen", said its master in 1864.<sup>5</sup> Schemes for the Sunday opening of Museums led to opposition from defenders of "the Sabbath", and charges of desecration were levelled in Parliament.<sup>6</sup> It has been noted that Playfair feared that his support of "Sunday opening" would tell against him, in his candidacy for the Edinburgh Chair, in 1858.<sup>7</sup> Although the matter was considered by a Select Committee in 1860,<sup>8</sup> it took most of the century before Sunday opening of the "State" Museums was permitted.<sup>9</sup>

#### b) The "nude"

Another field where care was needed, in the atmosphere of the times, was in that of life drawing and painting. This was not of necessity a "religious question", but it is conveniently treated here. Clergymen who charged that "The School of Art promotes licentiousness and furnishes an obscene demonstration", were quoted in the Engineer in 1857,<sup>10</sup> and the same journal said that "Life classes in some areas concentrate on heads ... because a nude study would be high treason against morality and religion".<sup>11</sup> There was much opposition in the debate on the estimates in 1859. One member suggested a reduction on the grounds that the Department paid for the services of nude models, "a painful and scandalous exhibition", because "the claims of morality are more important than those of Art". He had to be told by Lowe that the Department gave no such aid, but that it was a matter for the Local Committee. Another member

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1 Biographical Appendix

2 Rev. James Booth Education and Educational Institutions considered with reference to the Industrial Professions and the present aspect of Society (London Parker 1846) 39

3 Chapter XVII Section (A)(a)(i)

4 Examination the Province of the State (London Parker 1847) 42

5 S.C.S.A. A.3343 (Brenan)

6 Hd. CLV (1859) 374 (Ball, Lefroy, Griffith)

7 Chapter II Section (b)(ii)

8 P.P. (1860) XVI (1) (Select Committee on Public Institutions)

9 Chapter IX Section (c)(iv)

10 Engr. 10 April 1857

11 Ibid. 8 July 1859



linked nude studies with Sunday opening as "one vice leading to another", and said that help by grant to "any institution where such practices prevailed" was "an indirect support to a practical tendency to demoralise society".<sup>1</sup>

(Although other matters were raised in the debate, Cole noted only "discussion about the 'nude' and Sunday opening".<sup>2</sup>)

The Art Journal, no doubt stirred by these reflections, referred in 1860 to a report made by Macleod two years before, in which he referred to "prurient curiosity" at the life classes of the Royal Hibernian Academy, to which admission was obtained "merely by signing a register, with no guarantee that they were artists".<sup>3</sup> In that year, a return was called for of Schools using a nude model; details for Manchester only were given.<sup>4</sup> Cole and Redgrave strongly refuted charges that Vechte's design for the National Medallion was "indecent", before the 1864 Committee. It was, they claimed, "A work of the highest excellence".<sup>5</sup> Within a few years, however, the matter seems to have raised few objections. "Studies of the human figure from the nude model" were included in the Art Directory from 1870 at least, and by 1889 they were allowed under drawing, painting and modelling.<sup>6</sup> Opposition in Edinburgh was still strong, however, in 1878. The local School refused to use a nude model, despite the Department's strong pressure for the adoption of the practice, and the matter was not pursued.<sup>7</sup> The affair is of interest on two points, that the Department should now feel confident enough to press the matter, and that there was still enough resistance that it could be dropped.

Perhaps the last word on the subject of the "nude" should be left to Cole, since his story concerns the person who is seen by many to be the embodiment of the moral attitudes of the period which bears her name. Cole tried in vain to steer his sovereign away from some nude studies by his friend, Mulready, when the Queen visited the Museum in 1853. To his relief, when she insisted on seeing them, she turned in delight and said "What fine studies".<sup>8</sup>

#### c) The beliefs of officials

Cole's Diaries show that he was a regular reader of sermons and devotional works, and Church attender. (When he heard a sermon on "the diocesan inspection

1 Hd. CLV (1859) 370-374 (Haddo, Ball)

2 Cole MS Diary 25 July 1859

3 Art J. August 1860

4 P.P. (1860) LIII (587) (Classes formed for the study of the living model)

5 S.C.S.A. AA. 339-354

6 D.S.A. Art Directory 1889 58-59

7 D.S.A. 26th Report 131-134

8 Cole op. cit. I 287



of religion", he "gave a sovereign, as I wish to see religion in schools supported".<sup>1</sup> Donnelly made only two references in correspondence with Huxley which suggest his views. In referring to a dispute over house rental, he said "we, not being Christians, let her off",<sup>2</sup> and once, in talking of the servant problem, said "religion is at the bottom of all trouble".<sup>3</sup> While Huxley told Cole privately that "our proceedings were the most important ever taken against parsonical influence",<sup>4</sup> so far as can be ascertained, his only public pronouncement when appearing in a "Departmental" role was an oblique one. When arguing for science as a subject of elementary school study, he refuted the charge that it was "too difficult" by saying "a child is already expected to cope with the exceedingly difficult problems of dogmatic theology".<sup>5</sup> Huxley's opposition to General Bramwell Booth's campaign to bring light to "Darkest England",<sup>6</sup> and the part he played as the interpreter and publiciser of Darwinism, and of the agnosticism for which he coined the name, were carried on outside his "official duties".<sup>7</sup> Of course, he saw his "science classes" as the means of "spreading the true religion of science" throughout the land.<sup>8</sup>

d) The Aveling case

This case was a side-issue in the great controversy over the admission of the free-thinker Bradlaugh to the House of Commons, and it involved Dr. Edward Aveling and Mrs. Annie Besant, two of his associates at that time. Aveling obtained a London D.Sc. in 1876, and he was Professor of Comparative Anatomy at the London Hospital from 1875 to 1881. An "atheist and socialist", he contributed articles to the Student's Magazine which were designed to assist students in their preparation for the Department's examinations.<sup>9</sup> From 1879, he organised classes under the Department at a "Hall of Science" in Old Street, London, and he was assisted there by Mrs. Besant and two of Bradlaugh's daughters. (Payments to Aveling only are shown from 1879-1881, and to the Bradlaughs, also from 1881-1884, but there is no record that Mrs. Besant received

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1 Cole MS Diary 25 October 1873

2 MS letter Donnelly to Huxley 17 August 1885

3 MS letter Donnelly to Huxley 19 March 1892

4 Cole MS Diary 7 June 1861

5 R.C.S.I. A. 315

6 W.H.G. Armytage Heavens Below (London Routledge and Kegan Paul) 320

7 Cyril Bibby T.H. Huxley: Scientist, Humanist and Educator (London Watts 1959).  
William Irvine Apes, Angels and Victorians (London Weidenfield and Nicolson 1956)

8 MS letter Huxley to Dohrn 5 August 1872

9 St.M. 1877 (Physiology) 1878 (Darwin and his work)



payments.<sup>1</sup> While she "took Advanced certificates, one in Honours, and became qualified in eight different subjects", she "stood back from claiming recognition ... in order not to prejudice the claims of Mr. Bradlaugh's daughters".<sup>2</sup> ) In the belief of one contemporary, Aveling "could have earned a thousand a year by coaching".<sup>3</sup>

In August 1881, Gladstone was asked in the House if he knew of a speech given by Mrs. Besant at the Hall, in which she had defended Bradlaugh, and if he would "take measures to prevent the possibility of further riots".<sup>4</sup> This was followed, three weeks later, by a question from Sir Henry Tyler, a declared opponent of Bradlaugh, who queried whether the Old Hall lecturers were "fit teachers".<sup>5</sup> Aveling was certainly qualified under the Department's regulations, replied Mundella, the Vice President, and he added that "others may have assisted gratuitously". Abney, he said, had inspected the classes and had given a good report.<sup>6</sup> Three days later Tyler referred to an advertisement for the classes in an atheist periodical, the Junior Reformer. "Secularisation" was no excuse for the refusal of grant, said Mundella: all the students, save one boy of 15, were adults, he went on.<sup>7</sup>

Mundella continued to defend the Department and the lecturers.<sup>8</sup> "We do not enquire into the theological opinions of teachers of Science and Art", he said,<sup>9</sup> when Tyler was preparing a motion on the case.<sup>10</sup> When he was asked, in June 1882, to appoint a Select Committee on the matter, at the appearance on the Order Paper of Tyler's motion, that Aveling and his colleagues were "not proper persons to be employed under the Department of Science and Art," Mundella replied that he did not believe that the matter was of sufficient importance, that the classes in question were efficient, and that "religious opinions" were "no reason to refuse benefits".<sup>11</sup> Later that month, he told the House that he personally assumed full responsibility for the continuation of the grant, that he found nothing to justify its withdrawal, and that he had always assumed that he was "responsible for the actions of subordinate officers". He added that Aveling was qualified to teach by his possession of University degrees, and that the Bradlaughs had "passed the Department's examinations".<sup>12</sup>

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1 Annual Reports

2 Annie Besant Autobiography (Madras Theosophical Publishing House 1939) 347-349

3 T. Okey A Basketful of Memories (London Dent 1930) 62

4 Hd. CCLXIV (1881) 1355 (Ritchie)

5 Hd. CCLXV (1881) 727

6 Ibid. 728

7 Ibid. 820-822

8 Hd. CCLXVIII (1882) 5

9 Ibid. 543-544

10 Ibid. 294

11 Hd. CCLXX (1882) 472

12 Ibid. 1260-1261



When Tyler brought forward his motion, in August 1882, he read an article by Aveling which said that "God was left out of scientific calculations" and he quoted Hypatia Bradlaugh as saying that scientific education was "the most efficient aid in the Freethought Movement". There were no grounds for interference, said Mundella, in his last word on the subject, since Abney "had made surprise visits and found only dry science being taught". "Thirty five Reverends are teaching the subject under the Department" was his final riposte. The motion was talked out.<sup>1</sup> The following month, Aveling and his friends opened an additional "laboratory" in Oxford Street. The Old Hall School closed in 1884, and the Oxford Street venture ended in the following year. The former School had a total of 160 students at its peak, and only 50 when it closed. The "laboratory" never had more than 60 students.<sup>2</sup>

When Aveling published a text-book at about this time, it was condemned by "S.P.T."<sup>3</sup> as "a cram book of the worst and weakest type", with "errors of fact and definition", and "a rank crop of blunders".<sup>4</sup> Aveling acknowledged his debt to Mrs. Besant in the Preface,<sup>5</sup> No such gratitude was shown by him to the Department, five years later, when he severely criticised its Directory on "its method of order and study ... and its use of English".<sup>6</sup>

Mrs. Besant and Bradlaugh had issued a number of "Hall of Science Manuals" under the imprint of their "Freethought Publishing Company". Mrs. Besant wrote one of these, and in it described herself as "a qualified teacher under the Science and Art Department".<sup>7</sup> (When the book was reprinted ten years later, it was strongly condemned as "possessing but one sheet of illustrations" and was dismissed as of little value.<sup>8</sup>) She later moved away from her atheistical beliefs and developed the interest in Theosophy for which she is best remembered today.<sup>9</sup> It has been stated that Aveling ran further classes under the Department for a time, from 1894 to 1896, at the Socialist Democratic Federation Hall in the Strand, but there is no record of such classes in the Reports. He died in 1898, just four months after the death, in mysterious

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1 Hd. CCLXXIII (1882) 1405-1406

2 Annual Reports

3 Silvanus P. Thompson ?

4 Nat. 24 November 1881

5 E.A. Aveling Natural Philosophy for the London Matriculation (London Stewart 1882) Preface

6 S. and A. December 1887

7 A. Besant Sound, Light and Heat (London, Freethought Publishing Company 1881) Title page.

8 S. and A. October 1891

9 A. Besant Autobiography

10 Chushichi Tsuzuki The Life of Eleanor Marx (Oxford Clarendon Press 1967) 104



circumstances, of Eleanor ("Tussie") Marx, his common-law wife, and the daughter of the author of Das Kapital.<sup>1</sup>

Mundella's refusal to join in the "witch-hunt" on Aveling and his associates reflected greatly to his credit. How far the defence that "religious opinions were no reason to refuse benefits" would have succeeded, if the case had arisen thirty years before, must be a matter for conjecture. The Department had "turned the flank of religious and sectarian opposition", claimed Donnelly, when he spoke at a prize-giving at the Sheffield Higher Grade School.<sup>2</sup> It had "encouraged scientific instruction all over the country ... without ever raising any sectarian difficulty of any kind", he told the Secondary Education Commission,<sup>3</sup> With the notable exception of the Aveling case, he was correct in this assertion. In view of the great controversies of the century, it must be admitted that in this field, the officials had been particularly fortunate, or, perhaps, particularly skilful.

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1 Chushichi Tsuzuki The Life of Eleanor Marx (Oxford Clarendon Press 1967) 211

2 W.H.G. Armytage, "J.F.D. Donnelly, Pioneer in Vocational Education" Vocational Aspect II 4 (Bolton, May 1950) 15

3 R.C.S.E. A. 1108

## CHAPTER SEVENTEEN

## RELATIONS WITH OTHER BODIES

- A) Associations with educational aims
- a) The Society of Arts
    - i) Early activities
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- a) The National Association for the Promotion of Social Science
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  - h) General influence



A Department whose activities extended in to so many fields was certain to have influences upon, and to be influenced by, other institutions and organisations, some of which carried out similar work, and others which were set up to act as "pressure groups" for developments in particular spheres. The relations of the Department with the most important of these groups are detailed below. In addition, there is a consideration of the Department's connections with the Corps of Royal Engineers, since its development was greatly influenced by officers who had served, or were serving, in that Corps, during the period.

A) Associations with educational aims

a) The Society of Arts

1) Early activities

The part played by the Society in the encouragement of Exhibitions and Museums, and the roles of the Consort and Henry Cole in these spheres, have been recorded.<sup>1</sup> Tentative proposals for the development of artisan drawing schools, which have also been noted, did not come to fruition, because the Department, backed by the resources of the State, was set up to stimulate such activities.<sup>2</sup> Drawing had been encouraged by the Society for over a century, by means of competitions open to children below the age of 16. Millais and Eastlake had been successful competitors.<sup>3</sup>

The actual originator of a much more wide-spread means of encouraging study, by a system of "public" examinations, was a clergyman member of the Society, James Booth.<sup>4</sup> His public concern with the state of education, and its connection with "national existence", has been recorded.<sup>5</sup> In 1847, he argued that an examinations system was "the province of the state", and he outlined his proposals for a nation-wide organisation for such a purpose, which included examinations in science, and inspection "by persons appointed from the ranks of the teachers, visiting without notice". Success in such examinations would provide a means of entry into the Civil Service and the "industrial professions".<sup>6</sup> When the Society organised the Education Exhibition in 1854, Booth delivered a lecture in which he advanced arguments for examinations as incentives,<sup>7</sup> and he repeated these in two lectures to working men

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1 Chapter I and Chapter IX Section (c)

2 Chapter I Sections (d) and (g)

3 S.C.S.A. A. 520 (Cole)

4 Biographical Appendix

5 Chapter XVI Section (a)

6 Examination the province of the State (London Parker 1847)

7 The influence of examination as an instrument of education (London Routledge 1854)



in late 1856, and early 1857. Examinations, he argued, taught "presence of mind, coolness, sagacity in seizing the point of the question," and were "proofs of knowledge and tests of application". They provided a strong motive to effort, because "of the improvement of the position of the student thereby". "We will never radically improve education until we create a demand for it", Booth believed,<sup>1</sup> and since "the State" was not prepared to take the initiative, he set out to persuade his fellow members to organise a national examinations system.

ii) The first examinations scheme

It was later claimed that the idea of a scheme of examinations, to be organised by the Society, first began to develop in 1852.<sup>2</sup> Another member of the Society who took a leading part in the promotion of the scheme was Harry Chester, who had been a member of the staff of the Privy Council from 1839, and was to retire as Assistant Secretary of its Education Department in 1859.<sup>3</sup> "Discussed examination scheme with Chester", Cole noted in 1854,<sup>4</sup> the year in which the Society held its first examinations, but there was no firm development until 1856. Unions of Mechanics' Institutes were arranged, programmes of lectures were organised,<sup>5</sup> and Booth became Chairman of a Board of Examiners which included Goodeve, Huxley, Moseley and F.R. Sandford.<sup>6</sup> The examinations were "an extension of the same principle of competition sanctioned and confirmed by the Great Exhibition", believed Booth, and he hoped that a certificate would be "a sure passport to recognition and employment".<sup>7</sup>

Unfortunately, however, Booth considered that the actual organisation of the system, undertaken by Chester, was "vague, crude, and unfit for practical working". He charged that "no more than four or five of the members of the Council" were interested in the scheme, and that the majority

- 1 Systematic Instruction and Periodical Examination (London Bell and Daldy 1857)
- 2 S.C.S.I. A. 9002 (P. le Neve Foster)
- 3 Newcastle Commission A.642 (Chester) He was later told by Salisbury that he 'must not go about giving public lectures on state aid in promoting primary education' as this was 'not a subject upon which a person employed in this office should give a public opinion'. (MS letter Adderley to Cole 27 March 1858). He argued before the Newcastle Commission for a system of examinations by Local Boards. (AA.1728-1730)
- 4 Cole MS Diary 10 March 1854
- 5 Hudson and Luckhurst op. cit. 236
- 6 Leaflet bound with Systematic Public instruction etc. 44-45
- 7 How to learn and what to learn: two lectures advocating the system of examinations established by the Society of Arts (London Society of Arts 1856)



were "sick of the whole thing". He claimed that the bulk of the work was left to him.<sup>1</sup> He therefore resigned from the Board of Examiners, and from the Society.<sup>2</sup> Booth had favoured an oral examination as part of the system,<sup>3</sup> and Cole, too, was a proponent of such a scheme: it was incorporated in the earliest examinations, but was so difficult to administer that it was dropped in 1858.<sup>4</sup> At this stage, the Society had certainly developed much more intimate relations with the Mechanics' Institutes than had the Department: Playfair asked Cole to introduce a visiting French official to Chester, "so that he may learn about Mechanics' Institutes".<sup>5</sup> The Society's system was, in the belief of one contemporary, "the only attempt at a public universal examination".<sup>6</sup> There was, however, a surprisingly luke-warm reception from the Consort. He was not prepared to use the funds of the Commissioners to encourage them, since he "doubted their value".<sup>7</sup>

### iii) Jealousies and rivalries

When the Department's scheme of science examinations was being drafted, in 1859, the proposal that the whole field of "adult" education should be covered foundered, as has been noted,<sup>8</sup> because "Chester would not agree to giving up Science examinations".<sup>9</sup> Lowe agreed that there should be "no action on the Adult Education Minute, as the Society of Arts stood in the way".<sup>10</sup> "My Lords" said that they would "view with regret any action which would supersede or interfere with the action of the Society of Arts", in an early draft of the 1859 Science Minute, but the phrase "action of the Society of Arts" was replaced by "any voluntary action".<sup>11</sup> It was later stated that success in the Society's examinations would be seen as a qualification for students' entry to the Department's scheme.<sup>12</sup>

"The Society were intentionally pioneers to inspire government action", it was later claimed, and it was argued that its system was, in effect, taken over piece-meal by the Department, who "had all our forms to start their examinations with".<sup>13</sup> Once the 1859 scheme got under way, "the government

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- 1 Letter to the members of the Society of Arts (London No publisher 1857)  
 2 Wood op. cit. 373 (The details of the quarrel were "not worth recording", in Wood's opinion).  
 3 Letter to the members of the Society of Arts 37  
 4 Hudson and Luckhurst op. cit. 251  
 5 MS letter Playfair to Cole (n.d. 1857?)  
 6 Daily News 5 February 1857  
 7 MS letter Grey to Cole 2 March 1858  
 8 Chapter III Section (d)(i)  
 9 Cole MS Diary 28 December 1859  
 10 Ibid. 30 December 1859  
 11 MS.M 10.9  
 12 Ibid. 10.91  
 13 S.C.S.I. AA. 9003, 9013 (le Neve Foster)



examinations ... (did) ... by thousands what (the Society) were doing by tens"<sup>1</sup>  
 In 1863, "Chester is jealous of S.K.M."(sic) Cole noted<sup>2</sup> The following year,  
 "Chester said I was nettled at Banbury Science School wanting S. of A. encourage-  
 ment, also Science teacher plucked for S. of A. certificate", he recorded.<sup>3</sup> By  
 1864, the Society had discontinued its scheme of drawing prizes, and, instead,  
 gave "prizes for workmanship and execution of works of art in wood, stone,  
 marble, terra cotta, etc."<sup>4</sup> Some of its examinations were given up in 1866<sup>5</sup>

In 1868, Chester referred to the Samuelson Committee's "discussion of  
 the bigamy and trigamy of examinations".<sup>6</sup> A few days later, in a long letter,  
 he queried Cole's "condemnation of the absurd duplication of examinations".  
 "Do you forget that the Society's examinations were started and succeeding  
 before yours were thought of?", he asked, and chided "Oh, you bad man! ".  
 He believed that the Department should examine no children under 16, and, no  
 doubt speaking as an Education Department official, "should demand the 3 R's  
 as a pre-essential condition". "I think our scheme ... is much better, and  
 better carried out, than yours", he averred, but he agreed that "the best  
 possible scheme might be carried out by judicious combination between South  
 Kensington and the Society"<sup>7</sup> Before the Samuelson Committee, it was argued  
 that "much time and money would be saved if the Department and the Society  
 could agree on responsibility in specific areas of study", and that each  
 should eliminate some of its examinations, and expand others.<sup>8</sup>

#### iv) New directions

In the event, the Society "abolished many of (its) examinations conducted  
 by the Department"<sup>9</sup> With the restriction in the subjects now offered, its  
 examinations scheme nearly foundered completely. Donnelly's proposals that a  
 system of technological examinations, to supplement the Department's schemes,  
 should be developed, which have been recorded,<sup>10</sup> saved the system. When these  
 examinations were, in their turn, taken over by the City and Guilds, the  
 Society developed the "commercial examinations" which continue to this day.<sup>11</sup>

1 S.C.S.I. A.9002 (1e Neve Foster)

2 Cole MS Diary 21 December 1863

3 Ibid. 17 February 1864

4 S.C.S.A. A. 519 (Cole)

5 S.C.S.I. A. 9002 (1e Neve Foster)

6 MS letter Chester to Cole 16 August 1868

7 MS letter Chester to Cole 24 August 1868

8 S.C.S.I. AA. 5121, 5123 (Watts)

9 Cole MS Diary 12 July 1869

10 Chapter III Section (e)(iii)

11 Hudson and Luckhurst op. cit. 255



v) Co-operation and confusion

The tribute to Cole as the "second founder" of the Society, after what Cole himself called "a period of great decrepitude" in its history,<sup>1</sup> has been recorded.<sup>2</sup> Cole used the Society as a platform in the promotion of wider schemes, to the Department's general advantage: building grants,<sup>3</sup> "galleries of Science and Art",<sup>4</sup> and "Technical Instruction",<sup>5</sup> were some of his schemes which thereby received encouragement. Many of the Department's officials were closely connected with the Society, and some held high office. Cole was Chairman in 1850 and 1852, and received its Albert Medal in 1871. Captain Owen was Chairman in 1853, Donnelly in 1894-1895, and Abney in 1903-1904, and others who took a leading part in its activities were Richard Redgrave, Alan Cole, Bartley and Playfair.<sup>6</sup>

These close relationships did not go unnoticed. There was "no connection whatever between the Department and the Society ... and no relations between them", Cole claimed.<sup>7</sup> He was accused, however, at one "stormy meeting" of the Society, of not protecting its interests.<sup>8</sup> It was alleged that the Department "moved and managed" the Society, which for years had "played jackal to South Kensington, to make political capital and to be appealed to at the right time and in the right way".<sup>9</sup> The Department and the Society, it was admitted, were "mixed together in the greatest confusion".<sup>10</sup> "Men of high position who knew no difference, and said that they would not support the Society ... because it got money from the government," were quoted.<sup>11</sup> "The Society of Arts Department at South Kensington Museum" was referred to on one occasion by a speaker, who obviously, from the context of his address, had no malicious intent.<sup>12</sup> While the Department's influence on the Society must never again have been so great after the death of Cole, its officials remained connected with it. Whatever the criticisms, there can be little doubt that both bodies received benefits from the association.

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1. S.C.S.I. A. 520
  - 2 Chapter IV Section (f)(v)
  - 3 Cole MS Diary 28 March 1860
  - 4 Ibid. 13 January 1861
  - 5 Ibid. 23 January 1868, Engg. 24 January 1868, Engr. 31 January 1868 and Journal of Society of Arts XIV 793
  - 6 Hudson and Luckhurst op. cit. 230, 242, 182, 356, 372
  - 7 S.C.S.I. A. 518
  - 8 Art J. July 1863
  - 9 Engr. 31 January 1868
  - 10 S.C.S.I. A. 8204 (J.C. Buckmaster)
  - 11 Ibid. A. 5282 (Lawton)
  - 12 N.A.P.S.S. 1868 Report 446 (J.N. Langley)



b) The City and Guilds of London Institute

The developments leading up to the foundation of the Institute, and the parts played in these by Huxley, Bartley and Donnelly, have been recorded.<sup>1</sup> It was soon reported that students and teachers looked upon the body's examinations as additional to, and not a substitute for, the Department's examinations: teachers said that they tried to persuade their students to go on to the technological examinations.<sup>2</sup> It was believed that the Institute's classes were attracting students to the Department's examinations, since they now saw the opportunity for continuing study.<sup>3</sup>

After several delays, the Institute's own College at Finsbury was opened in 1884, and it was announced that it offered "free courses to technical teachers".<sup>4</sup> "Your pet institution is in a bad way", Donnelly told Huxley, perhaps with some satisfaction. "It has only seventeen students", he said, and he believed that "they had much better hand it over to us with a decent income",<sup>5</sup> when he discussed "the building in Exhibition Road" which was the Institute's South Kensington College. He "hoped that it will fall into our hands". "The only good thing" the Institute had done, he thought, "was to take over my system of technology examinations ... and even that they somewhat spoiled".<sup>6</sup> The City Companies had objected to the foundation of the Institute at Kensington in any case, Donnelly reported, "but not because the place was bad, or to stop it getting into our hands".<sup>7</sup> (The site was, however, seen as "removed from the workmen" by some critics.<sup>8</sup>)

The Department did not "get hold" of either Institution. The Finsbury College proudly "refused to accept outside examinations ... and was thus not constrained to work within the hard and fast lines laid down by others".<sup>9</sup> With the development of the teaching of Manual Instruction, the College offered a teachers' certificate for Woodwork<sup>10</sup> and could soon report a flood of entrants.<sup>11</sup>

One of the institutions subsidised by the Institute was regarded by Donnelly with especial concern, in his private capacity. This was the School

1 Chapter IV Section (f)

2 D.S.A. 31st Report 48 (C.A. Buckmaster)

3 D.S.A. 32nd Report 37 (Abney)

4 Engr. 4 July 1884

5 MS letter Donnelly to Huxley 13 February 1885

6 MS letter Donnelly to Huxley 13 October 1886

7 MS letter Donnelly to Huxley 26 January 1887

8 Sir Philip Magnus Educational Aims and Efforts 1880-1910 (London Longmans Green 1910) 98

9 Engr. 21 November 1890

10 Nat. 6 August 1891

11 Ibid. 28 July 1892



of Art Woodcarving, which was taken over from the Society of Arts, which had founded it in 1878, in Oxford Street, with the aid of a grant from the Drapers' Company. It had a variety of homes in its forty years existence, including the Albert Hall, the City and Guilds Institute at Kensington, and the Royal School of Art Needlework.<sup>1</sup> Donnelly acted as Chairman of the School's Governors until his death, and was succeeded by another Department figure, Thomas Armstrong.<sup>2</sup> The School never appears to have flourished. Donnelly addressed letters to periodicals which asked them to publicise scholarships, and offered the information that "orders are executed",<sup>3</sup> announced vacancies, and said that tuition was "undertaken by correspondence",<sup>4</sup> and referred to a scheme of half-fees for artisans.<sup>5</sup> The College closed its doors in 1914.<sup>6</sup>

The criticisms of the Department by a leading official of the Institute, Philip Magnus, and two of its lecturers, Silvanus Thompson and George Holliday, have been noted in various parts of the work. Relations were, of course, complicated by the unresolved difficulties over the part to be played in Technical Education by the study of "principles", and this accounted for much of Thompson's opposition, in particular. As was the case with the Society of Arts, the reciprocal influences of Department and Institute were in general to their mutual benefit.

### c) Regional bodies

The relations of the Department with the regional associations formed in the North of England, by voluntary institutions, were most important in the early days of its own development. The schemes of Kay-Shuttleworth, first Secretary of the Education Department, for further education in East Lancashire, led to the formation of the East Lancashire Union.<sup>7</sup> His ideas for "itinerant teachers", and Cole's interest in his schemes, have been recorded.<sup>8</sup> In 1863, the East Lancashire Union was merged in the Union of Lancashire and Cheshire Institutes, which continues to this day.<sup>9</sup> The Union's examinations system met competition from the Department, and its numbers fell: it then concentrated

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1 Hudson and Luckhurst op. cit. 268

2 Armstrong op. cit. 97

3 Engg. 12 October 1883

4 Ibid. and Engr. 7 October 1887

5 Nat. 11 October 1887

6 Hudson and Luckhurst op. cit. 268

7 Frank Smith Life of Sir James Kay-Shuttleworth (London Murray 1923) 250-251

8 Chapters II Section (a) and III Section (d)

9 Union of Lancashire and Cheshire Institutes 1839-1939 (Manchester U.L.C.I. 1939) 14



on the primary subjects in which so many adult students lacked grounding.<sup>1</sup> Later, however, the Scientific Instruction Commission was told that the Department's scheme had been of "great service", and the developments in co-operation, which included successful attempts to form classes for science teachers, were recounted.<sup>2</sup> The Commission on Technical Instruction, too, heard generally complimentary evidence from officials.<sup>3</sup>

The Yorkshire Union of Mechancis' Institutes was much less co-operative, because of the greater opposition in their area to "state aid", which has been noted.<sup>4</sup> Its officials were very critical of the Department before the Technical Instruction Commission, particularly on "want of method" and "lack of application to manufactures", but they could report some progress.<sup>5</sup> Kay-Shuttleworth's early work had paved the way for acceptance West of the Pennines, and the good reception which was given to J.C.Buckmaster<sup>6</sup> helped in the greater development of the Department's classes there. The Department was possibly inhibited by fears that there would be complaints if it appeared to be offering aid, rather than waiting until local bodies approached it: opportunities for better earlier progress would, therefore, appear to have been missed, but opposition seems to have gone by 1880, and great developments followed.

d) The National Association for the Promotion of ~~Technical~~ and ~~Secondary~~ Education

The creation of the Association (which later added "Secondary" to its title) in the century's penultimate decade has been recorded.<sup>7</sup> The interest in its schemes of personalities of the order of Acland, Mundella, Roscoe, Playfair, Gorst and Devonshire, meant that it formed a powerful "pressure group". The efforts of its members to secure legislation for Technical Instruction have been noted.<sup>8</sup> Hartington, its first President, claimed for his Association most of the credit for the "increasingly practical nature" of the Department's examinations.<sup>9</sup> (Conversely, Donnelly had believed that Hartington was "lethargic" when the Technical Instruction attempts were being made.<sup>10</sup>) From 1891 the Association published a bi-monthly Record of Technical and Secondary Education which outlined its aims, and recounted the progress of

1 N.A.P.S.S. 1865 Report 317-329 (Ughtred J. Kay-Shuttleworth)

2 R.C.S.I. AA. 2145-2149 (Shore, Secretary of the Union)

3 R.C.T.I. AA. 549-762 (Gee and Reynolds)

4 Chapter XIV Section (a)(i)

5 R.C.T.I. AA. 363-532 (Baines and Curzon)

6 S.C.S.I. A. 8222 (J.C.Buckmaster)

7 Chapter V Section (d)(i)

8 Chapter V Sections(d)(ii) to (v)

9 Nat. 9 July 1891

10 MS letter Donnelly to Huxley 21 April 1889



national and provincial schemes. It disclaimed any intention to "interfere with the teaching of trades in workshops", but urged the development of "hand and eye dexterity", the improvement of general education, and, in particular, secondary education, and emphasised the "study of the principles of science and art underlying industries".<sup>1</sup>

The "accuracy of the Department's examinations" was not in question, said Roscoe, in an early article, but he believed that its system "cannot long continue", and he urged the adoption of "an effective system of local inspection".<sup>2</sup> The views of Roscoe's fellow General Secretary, Acland, and his efforts as Vice-President to do away with "payments on results", and to replace the system with one of full inspection, have been detailed.<sup>3</sup> In general, the Association did not attack the Department publicly. Some of its members regarded the hand-over of the responsibility for more elementary work to the County Councils "as the most serious blow struck to Technical Education for years",<sup>4</sup> because of the threat of a loss of aid.

All the credit for improvements in Technical Education since its formation were claimed for the Association in 1894.<sup>5</sup> The views of the Secondary Education Commission on the Department were recounted without comment.<sup>6</sup> While The Record welcomed the ultimately unsuccessful Secondary Education Bill of 1898,<sup>7</sup> it saw its successor of the next year as "a great improvement".<sup>8</sup> The Association sent a deputation to the Lord President, on the creation of Local Education Authorities, in the last year of the Department's existence.<sup>9</sup> As has been said, the Department was rarely attacked publicly by the Association or by its members, who appear to have reserved their ire for the School Boards, which they seem to have regarded as illegal interlopers. The private and, in the case of Acland, official intervention meant, however, the ultimate extinction of the Department which it had supported in 1889 and 1890.

#### e) The Commissioners of the 1851 Exhibition

The very close relationships with the Commissioners in the Department's early days have been detailed.<sup>10</sup> It would be true to say that the later

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1 Rec. I 1

2 Ibid. I 112-117

3 Chapter V Section (f)

4 Hd. CCCXLV (1890) 1484-1485 (Mundella)

5 Rec. III 307

6 Ibid. V 5-89

7 Ibid. VII 269

8 Ibid. VIII 159

9 Nat. 23 March 1899

10 Chapter I Sections (f) to (i) and Chapter II Section (c)(iv)



careers of Cole and Playfair were largely founded on those connections.<sup>1</sup> The link with the Commissioners was, however, another cause of opposition to the Department. "The mystery of their relations" was given as a cause for alarm,<sup>2</sup> at a time when the failure of the scheme for the transfer to South Kensington of the National Gallery, among other disappointments, caused the Commissioners to "meet to decide to separate from the government and pay it off".<sup>3</sup> The Commissioners had, in fact, to borrow from the Governors of the Greenwich Hospital to pay off the loan which had been granted by the government in 1852: they kept the bulk of the estate, and the government took over the "Department" land.<sup>4</sup>

The Commissioners, whose personnel changed with time, but whose functions and corporate existence continued, supported a variety of "educational" enterprises: International Exhibitions, the Albert Hall, schemes for Music and so on, were all aided. The Kensington Estate was developed to the point where the Greenwich loan could be paid off.<sup>5</sup> "The recent enormous increase in house prices near the Museum" was advanced as an argument by Robinson for the grant of an official residence in 1862.<sup>6</sup> The Museum, together with the 1862 Exhibition, had the effect of increasing the popularity of South Kensington as a residential area. The original purchase price for an estate of 87 acres had been £300,000: when the government bought land for the erection of the Natural History Museum in 1865, they paid £7,000 an acre, roughly double the original price.<sup>7</sup>

The whole estate should be handed over to the government, Donnelly believed in 1874.<sup>8</sup> "The Commissioners had become a great sham", Cole's friend Gibson believed two years later.<sup>9</sup> While it was later claimed that the Commissioners had, at that time, been in a position to offer land and a gift of £100,000 for the erection of a Science Museum,<sup>10</sup> they ran into a period of great financial difficulty, largely because of the failure of the annual International Exhibitions which they had subsidised.<sup>11</sup> There appears to have

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1 The first Commissioners included Granville, Taunton, Gladstone, Lord John Russell, Eastlake and Cobden. Northcote, Sandford and John Scott Russell were administrative officers.

2 Engr. 25 June 1858

3 Cole MS Diary 1 May 1858

4 Engr. 21 January 1859

5 C.H.Gibbs-Smith op. cit. 37

6 MS.M 14.179

7 Hd. CLXXVI (1865) 1558

8 Cole MS Diary 5 March 1874

9 Ibid. 11 June 1876

10 Nat. 30 April 1891

11 Chapter IV Section (j)(v)



been a suggestion that the government should buy the whole of the estate in 1880, although Donnelly, for one, doubted the feasibility of this proposal.<sup>1</sup> "The affairs of the Commissioners" had been "brought to a financial crisis", when he took over in 1883 as Honorary Secretary from Scott, a leading official of the Department, who died in that year, Playfair said later.<sup>2</sup>

Playfair was instrumental in reducing the debt from £180,000 to £26,000.<sup>3</sup> He also played a leading part in developing a scheme of research scholarships, which continues to the present day. "Aid to research" had been suggested by Lockyer in 1876.<sup>4</sup> His journal later objected to the sale of land, to support such a scheme, as an "autocratic act".<sup>5</sup> Mundella, Huxley, Garnett, Lockyer and Roscoe acted as advisers, and Nature eventually saw the scholarship system as "a great impetus to research".<sup>6</sup> The development of the Imperial Institute was also supported by the Commissioners, despite Playfair's opposition,<sup>7</sup> but from 1891 the research scholarships set the new pattern. By 1964, the Commissioners had made over £1,800,000 in contributions to aid "Science and Art", still retained £900,000 capital, and had an annual income of £29,000.<sup>8</sup> Thus, one more body which initially had a close connection with the Department, and shared in its development, continued successfully long after its demise.

B) Associations which attempted to influence general developments

a) The National Association for the Promotion of Social Science

The basic aim of this Association was to influence the social policy of its day. It owed part of its inspiration to Brougham, and the meetings which led up to its foundation in 1856 were held at his home. Lyon Playfair was a member of the Association's Council from 1859, addressed its Education section in 1870, and was Chairman of the Health Section in 1874. (While Ryalls, the Secretary, was successful in his request that Playfair should perform this function,<sup>9</sup> he would appear to have met with a refusal when he asked him to preside over the whole Congress in 1878.<sup>10</sup>) Poynter was Chairman of the Art

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1 Cole MS Diary 8 September 1880

2 Wemyss Reid op. cit. 380

3 Ibid. 443

4 Cole MS Diary 26 June 1876

5 Nat. 15 August 1889

6 Ibid. 28 August 1890

7 Reid op. cit. 449

8 Gibbs-Smith op. cit. 38

9 MS letter Ryalls to Playfair 16 March 1874

10 MS letter Ryalls to Playfair 4 July 1878



Section in 1877. The paper given by Buckmaster in 1862,<sup>1</sup> and the comments offered on a variety of the Department's activities by speakers at Annual Congresses of the Association, have been recorded in various parts of the work.

"I know very little of Science and Art, but of the so called Social Science I have nothing but contempt", Lowe told Cole in 1860.<sup>2</sup> The "artisan class" played little active part in the Association's deliberations or organisation. As new bodies were set up to work in more specific fields, the Association's subscription list contracted. G.W. Hastings, M.P., who had been the real driving force behind the Association, served five years in prison for fraudulent conversion after its demise, which came in 1886.<sup>3</sup>

b) The National Association for the Advancement of Art and its application to Industry

This body had a very short-lived existence, from 1888 to 1890: in the belief of one of its supporters, "Art was not at home in the wordy atmosphere of Congresses".<sup>4</sup> During its brief life-span, its members were consistently critical of the Department at its annual meetings.<sup>5</sup> Since most of them appear to have been artists rather than designers, this opposition would seem to have been based on fear of competition from the "artists" produced by the Art Schools, rather than on any dispute over the industrial applications of the courses the Schools provided.

c) The British Association for the Advancement of Science

Successive Presidents of the Association in the Department's early years, Hopkins in 1853, and Harrowby in 1854, welcomed its activities, and the interests shown by the Association in the measures for the improvement of science teaching facilities have been recorded in appropriate sections of the work. Some of the Department's officials belonged to the Association. Huxley and Playfair were members from 1852, the former acting as President in 1870, and the latter holding the office in 1885. Donnelly and Iselin were members from 1861 and 1862 respectively. Officials who read papers at Annual meetings were C.A. Buckmaster, in 1862, and Bartley, in 1877. Abney was President of the Mathematics and Physical Science Section in 1887, and gave numerous papers.<sup>6</sup>

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1 These details are taken from N.A.P.S.S. Annual Reports of the appropriate dates.

2 MS letter Lowe to Cole 3 December 1860

3 Brian Rodgers, "The Social Science Association" The Manchester School of Economics and Social Science XX, 3 (Manchester September 1952) 283-310

4 Magnus op. cit. 117

5 Chapter VIII Section (iii)

6 Details from Annual Reports of the British Association.



C) The Corps of Royal Engineers

a) The civilian employment of members of the Corps

"The late Lord Taunton<sup>1</sup> ... was accustomed to say that whenever the government was in difficulty in finding an officer of high capacity for civil administration, the right man was sure to be obtained from the officers of the Royal Engineers", said Cole, in a memorandum which he addressed in November 1869, to Ripon, the Lord President. "The valuable assistance afforded by such officers" in his work with the Commissioners and in the Department was alluded to by Cole. "Every department of the government", he said, employed the officers. He went on to argue that the members of the Corps should be recognised as "public scientific servants of the Crown" and that the Civil Service should have "perfect freedom in borrowing them". Their duties could include "public buildings under inspection, state telegraphs, and local Inspectors of Schools". "Military rank assists in their civil offices by giving them recognised status and position ... new actions can be tried without creating a new office for life, or entailing the cost of retirement on pension", he concluded.<sup>2</sup> (This memorandum was later quoted, with approval, by the historian of the Corps.<sup>3</sup>) Earlier that year, Cole read a paper to the Society of Arts in which he said that "Among the very best civil servants are officers of the Royal Engineers"<sup>4</sup>. He was thus arguing for a formal acceptance of a situation which had existed in his own Department since its foundation.

The whole question of the peace-time employment of officers of the Corps was at this time under consideration. In 1870 Cardwell, Cole's old chief, now Secretary of State for War, set up a Committee to consider the matter. (One of the two civilian members of that Committee was Ralph Lingen). It heard evidence in the main from officers of the Corps: a number of government departments submitted memoranda. The Department was shown as giving, or having given, employment to "an Inspector, Science and Art, Engineer and Architect, and a Deputy Superintendent, South Kensington Museum"<sup>5</sup>. (Although not named, these were Donnelly, Fowke and Festing respectively). Cole submitted a memorandum in which he restated his views. He particularly mentioned the

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1 Henry Labouchere, Cole's first political chief at the Department of Practical Art.  
 2 Cole op. cit. II 323-327  
 3 Whitworth Porter History of the Corps of Royal Engineers (London Longmans Green 1889) I 2  
 4 Cole op. cit. II 335 (On the efficiency and economy of a National Army)  
 5 Report of the Committee appointed to enquire into the employment of officers of the Royal Engineers in Civil Departments of the State 1870 [P.P. (1871) XIV (139) Appendix I 17]



employment of officers as "occasional inspectors", and stressed the advantages of status, mobility, avoidance of expense, and lack of permanency. "If they do not succeed", he said, "they can easily be changed". The "discipline and familiarity with office routine", which was such an important feature of the "administrative" role of the Inspectors, received special mention.<sup>1</sup> The Education Department's memorandum, however, said that it "did not see how the use of Inspectors from the Corps of Royal Engineers would be commensurate with the work of elementary education".<sup>2</sup>

In its Report, the Committee favoured the extension of the use of the services of the officers of the Corps, especially as this would be a means of using the services of highly trained public servants, for whom, in time of peace, there is not strictly military employment", and it noted "their acquaintance with business, and familiarity with administrative routine". Where permanently employed, officers should be placed on the Reserve; it was recommended: salaries should be paid by the employing Department, but promotions to higher ranks should be made as vacancies occurred.<sup>3</sup> An increase in the proportion of officers seconded for a variety of duties followed. Of a total of 145 Captains and Second Captains in 1870, 14 were on secondment: of 265 officers with the equivalent ranks of Major and Captain in 1881, 31 were so employed, and this represents an increase from just under 10% to just under 12% of officers in this category.<sup>4</sup>

b) The training of the Royal Engineers

i) The Chatham courses

Apart from their experience in "man-management" and administration, which would be a general feature of service careers, the actual training of Engineer officers at this time, and for many years to come, was probably the most highly organised "scientific" instruction provided for fairly large groups on a regular basis. Engineer officers were temporarily commissioned after a general course at the Royal Military Academy, Woolwich.<sup>5</sup> (There were complaints that cadets were "induced by a large pecuniary advancement to the

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1 Report of the Committee appointed to enquire into the employment of officers of the Royal Engineers in Civil Departments of the State 1870 [P.P. (1871) XIV (139) Appendix I 23]

2 Ibid. 23

3 Ibid. 5-9

4 Monthly Army Lists January - February 1870 and January - February 1881

5 1870 Report [P.P. (1871) XIV] I (Cardwell) and 8



Engineers", who "picked the best, leaving the remainder to the Artillery".<sup>1</sup> This was not popular with the Gunners). Further technical courses were then followed for two years at the School of Military Engineering at Chatham, until the commission was confirmed.<sup>2</sup> The Chatham course, which could be followed by further courses at the Staff College for the "more ambitious", included, in addition to the study of various aspects of military engineering, "Chemistry, workshop, and laboratory experience". "Demonstration schools" were an important feature of the establishment.<sup>3</sup>

ii) Addiscombe

Until 1862, it was also possible to enter the commissioned ranks of the Engineers, via service in India, through the Military College at Addiscombe in Surrey. This had been opened by the Directors of the East India Company as a "Military Seminary" in 1809, to train officers for its military arm, after the failure of attempts to set up a College near Calcutta.<sup>4</sup> An arrangement with Woolwich to train such officers had proved to be an uncertain course of supply during the period of the Napoleonic Wars.<sup>5</sup> There was a simple entrance examination,<sup>6</sup> and the minimum age of entry was 14.

The course lasted for two years, although it was possible to qualify in a shorter period. While Chemistry, Civil Drawing<sup>7</sup>, and Electricity<sup>8</sup> featured in the curriculum, Mathematics was the basis of the course. Six of the staff of seventeen in 1857 were "Mathematics Professors": the subject counted for roughly one third of the marks in the final examinations.<sup>9</sup> "The course of education, consisting of Cope's<sup>10</sup> Mathematics, tempered with obsolete fortification, and such trifles as Drawing, French and Latin ... could fairly be termed a race decided by Mathematics", declared an anonymous ex-cadet in later years.<sup>11</sup>

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1 "A Field Officer" Present system of joint Education of Artillery and Engineers injustice to one Corps and serious injury to the Public Service (London Parker 1872)

2 1870 Report 1

3 Nat. 11 April 1872

4 Cambridge History of India (Cambridge University Press 1932) VI 161

5 H.M. Vibart Addiscombe: its Heroes and Men of Note (London Constable 1894) 3

6 Ibid. 15 and H.T. Lambrick John Jacob of Jacobabad (London Cassell 1960) 7

7 Vibart op. cit. 44

8 Lambrick op. cit. 8

9 Vibart op. cit. 154

10 Cope was Head of Studies from 1822 to 1862 (Vibart op. cit. 44)

11 W. Broadfoot Addiscombe Blackwood's Magazine (May 1893) 647-657, quoting In the Company's Service (London Allen 1883)



The Seminary was re-named "Military College" in 1855.<sup>1</sup> In the re-organisation of the government of India after the Mutiny, Canning decided that the College should be retained.<sup>2</sup> It was, however, closed as an initial training school in 1861,<sup>3</sup> but it continued to be used as a School for the further training of cadet-officers for the "scientific corps" until at least 1862, since Cole's son Harry completed his technical training there, after he had left Woolwich.<sup>4</sup> During its life-time, said one of its historians, in a phrase which echoes the Lowe of 1862, "economy was always kept permanently in view, and efficiency was not neglected".<sup>5</sup> There were two kinds of prize open to its younger cadets. Those who passed highest in the lists were commissioned in the Engineers or the Artillery: the others went to the Infantry. (This was suggested as the kind of system which should prevail at the Universities, with no further specifications, by a Social Science Congress speaker in 1864).<sup>6</sup> "The best military draughtsmen" were rewarded from the earliest days with "boxes of colours, and other suitable drawing materials".<sup>7</sup>

Two men who later became Field Marshals, Lords Napier and Roberts, began their careers at Addiscombe, and over 3,600 officers in all went on to India from the College.<sup>8</sup> Nine of the Royal Engineer "Inspectors" who served the Department in this capacity were Addiscombe men.<sup>9</sup> There is a further link with the Department in the fact that Donnelly's father, a veteran of India, was a member of the Addiscombe staff from 1851 until its closure,<sup>10</sup> so that Donnelly must have known the College as a young man. (Cole's friend Thackeray spent his holidays there as a boy from 1822 to 1824, when his step-father was Resident Superintendent.<sup>11</sup>

### c) Seconded officers

After Colonel Reid of the Engineers was introduced by Henry Labouchere to the Consort, in early 1851,<sup>12</sup> the services of officers and men of the Corps<sup>13</sup> were freely used in connection with the Great Exhibition. Second Captain<sup>14</sup>

1. Vibart op. cit. 161

2. M. Maclagen Clemency Canning (London Macmillan 1962) 223

3. Vibart op. cit. 168

4. Cole MS. Diaries 1861-1862

5. Broadfoot op. cit. 656

6. N.A.P.S.S. 1864 Report 477 (Rev. Thomas Bissett)

7. Broadfoot op. cit. 653

8. Sir Malcolm Seton The India Office (London Putnam 1926) 192-193

9. Vibart op. cit. Appendix (Roll of former Cadets) and D.S.A. Annual Reports

10. Vibart op. cit. 200-203

11. Ibid. 57

12. Porter op. cit. I 2

13. Only the officers were then known as Engineers. The other ranks formed the Regiment of Sappers and Miners, until 1855, when, with the abolition of the Board of Ordnance, both Regiments were amalgamated to form the Corps of

14. Monthly Army List January - February 1851



H.C. Cunliffe Owen, who had served with distinction five years before in the Kaffir Wars,<sup>1</sup> commanded one of the two Companies. He was later appointed General Superintendent Foreign Side, and ultimately "received many tributes from foreign representatives".<sup>2</sup> His presence of mind avoided an unpleasant incident at the official opening of the Exhibition, when "movement of crowd towards the throne was stopped by Sappers and Owen".<sup>3</sup> Owen's employment as Inspector of Drawing has been recorded.<sup>4</sup> Cole was unsuccessful in his attempts to secure a permanent secondment.<sup>5</sup> He was told that the Consort was "sorry that Owen cannot be employed where his executive powers may be best used, but a Captain of Engineers must do a Captain of Engineers' duty".<sup>6</sup> Owen departed for the Crimea, probably to his own satisfaction.<sup>7</sup> Cole later talked with him "about Engineer officers in the Civil Service".<sup>8</sup>

Francis Fowke and John Donnelly were to have longer careers with the Department. Fowke was in charge of Machinery at the Paris Exhibition in 1854: his later career has been recorded. At his death, in 1865, he was the Department's Architect, Engineer, and Superintendent of Construction. Donnelly's first appearance at South Kensington on his return from the Crimea, his gradual promotions by Cole in a variety of posts, and his eventual succession to full command of the Department, have been noted. Despite two periods when his return to the Colours seemed possible,<sup>9</sup> he climbed the promotion roll of his Corps, and of the Army, until his appointment as a Major General in 1889. (He is not shown in Annual Reports as "late Royal Engineers" until 1897). There was some difficulty in obtaining his initial secondment. When Cole "called on Colonel Gordon",<sup>10</sup> he was told that, while the Colonel was "personally friendly, the authorities were not so. Thought if we asked to have Donnelly, we should lose the Sappers".<sup>11</sup> Cole was successful, however, in his double bid: Donnelly and a detachment of Sappers remained at South Kensington for the rest of the century.

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1 Porter op. cit. II 26

2 Ibid. II 343, 345

3 Cole MS Diary 1 May 1851

4 Chapter X Section (a)(iii)

5 MS letter Cole to Grey 13 June 1853

6 MS letter Grey to Cole 27 January 1855

7 Porter op. cit. II 495

8 Cole MS Diary 16 October 1856

9 He was not finally placed on the Reserve until 1875, although the effective date was 1874. (P.M. H2.109 L2.51 and L2.45e)

10 The Monthly Army List of January-February 1859 features a Lt.Colonel J.W. Gordon. Donnelly's friend "Chinese" Gordon was still, at this time, a Second-Captain.

11 Cole MS Diary 28 June 1859



Whenever it was possible, Donnelly used his influence to urge the appointment of fellow officers. When the question arose of confirming Iselin's appointment as a permanent Inspector, he told Cole that he "would prefer to have an Engineer officer,"<sup>1</sup> but must have given way. It was most probably due to Donnelly that Henry Scott, who had also been employed in the Great Exhibition, joined the Department. Scott, who became F.R.S. in 1875, also gained the eventual rank of Major-General. He became Director of Buildings, after it had been hinted that he would succeed Cole as Director of the Museum. He served, with notable lack of success, as Honorary Secretary to the Exhibition Commissioners until his death in 1883.

The services, and eventual promotion to high office, of William Abney have been detailed. A third Major-General was E.R. Festing. After acting as an Inspector of laboratories and Deputy Superintendent of the Museum,<sup>2</sup> he became its Assistant Director in 1868, and on the separation of the collections in 1893, was put in charge of the Science Division. Two other Engineers who became Directors of Museums were Colonel Sir Robert Murdoch Smith and Lt. Colonel G.T. Plunkett. Murdoch Smith was notable as one of the few officers of his period to be commissioned direct from University.<sup>3</sup> He was Director of the Edinburgh Museum from May 1885.<sup>4</sup> Plunkett became Director of the newly housed Dublin Museum in 1890.<sup>5</sup>

#### d) The Sappers

The "Engineer connection" was not restricted to the use of the services of the officers. The employment of a Company of Sappers in clearing the South Kensington estate<sup>6</sup> brought Donnelly, who was the commander of the detachment, to the notice of Cole. Sappers were used once more at the 1862 Exhibition.<sup>7</sup> A permanent detachment at the Museum was responsible for the Fire Service there. Their services were particularly appreciated when a small fire broke out in one of the painting rooms in 1857.<sup>8</sup> Their presence of mind, and efficiency, prevented serious damage when the private Exhibition, on adjacent land, burnt to the ground, and could have taken the Museum with it, in 1885.<sup>9</sup>

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1 Cole MS Diary 8 December 1865

2 MS.M 18.120 (28 June 1864)

3 Nat. 7 May 1885

4 D.S.A. 32nd Report 101

5 D.S.A. 37th Report 200

6 Porter op. cit. II 346

7 Ibid. II 347

8 Cole MS Diary 17 March 1857

9 Ath. 20 June 1885



Sappers were the Department's first photographers.<sup>1</sup> They helped to set up Local Exhibitions.<sup>2</sup> Evidence given by Donnelly in the Goffin case shows that a special detachment of Sappers from Chatham printed the all-important examination papers.<sup>3</sup>

e) Other services

The very great contribution made by Engineer officers as "occasional Inspectors" has been recorded.<sup>4</sup> Between 1869 and 1882, a total of 245 officers undertook the duty. The full establishment of officers of the rank of Major and below, in the territories outside India, reached its highest figure of 617 at this period.<sup>5</sup> In 1869, when the system had just begun, the establishment in the United Kingdom for equivalent ranks was 320.<sup>6</sup> Thus, a high proportion of the officers at that time contributed their services. (A relatively small number of higher ranking officers served as Inspectors from time to time. A Major-General Broughton inspected in 1868. One would believe that there would be no doubts on "status". The effects of the arrival of this officer on the teachers can also be imagined). Eighteen of the 85 sub-Inspectors appointed for work in Elementary Schools in 1885 had been members of the Corps.<sup>7</sup>

As least two Engineers acted as Examiners: Lieutenant Clarke was responsible for Geometry, and Major Seddon for Building Construction, for much of the later period.<sup>8</sup> Cole's recommendation of "Webster R.E." to Sandford, as the man "to look after ... Health in Schools",<sup>9</sup> did not have any immediate consequences. The appointment of a Royal Engineer, Captain Shaw, as one of the additional Inspectors, "the twelve Apostles", has been noted.<sup>10</sup>

f) Reciprocal connections

"Colonel Owen proposed that we should train an officer to take our certificates who would be a teacher at Chatham, and likewise two Sappers for the men", Cole noted in 1857. A visit to Chatham, with Fowke, a few days later, enabled Cole to see "the practical courses of instruction, drawing schools, etc.",<sup>11</sup> but no further developments were recorded. Cole's son Harry

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1 Art J. November 1856

2 Engr. 16 October 1857

3 S.C.G.C. A. 139

4 Chapter X Section (b)(ii)

5 Monthly Army List January-February 1881

6 1870 Report [P.P. (1871) XIV (139) 10]

7 Chapter X Section (c)(v)

8 Annual Reports

9 Cole MS Diary 12 April 1882

10 Chapter X Section (d)(i)

11 Cole MS Diary 11 and 15 January 1857.



was commissioned in the Engineers, after he came "26th at Woolwich" and "18th out of 20 for Engineers" at Addiscombe.<sup>1</sup> (When Cole later attempted to use Northcote's offices to persuade Sir John Laurence, Commander-in-Chief India, to give Harry a home posting,<sup>2</sup> he was told that Laurence was "short of Engineers: like sending bullion home".<sup>3</sup> His reply was that if Laurence wished "to keep his Engineers, he must keep them alive"<sup>4</sup>) Donnelly's old friend, General Gordon, was asked by the Department to "obtain specimens of Eastern tiles" on his last, ill-fated, Expedition.<sup>5</sup>

At the the time of fears of war with the France of the third Napoleon, the Department raised its own volunteer body at Headquarters. Initially, this was a Rifle Corps,<sup>6</sup> but a printed notice later named the "1st Middlesex Volunteer Engineer Company".<sup>7</sup> The Commanding Officer was Macleod.<sup>8</sup> (He remained a Lieutenant Colonel of Engineer Volunteers until 1870.<sup>9</sup>) There are frequent references in the Cole Diaries to drills: Burchett, R. Thompson and Donnelly were elected, in that order, to the "Volunteer Committee",<sup>10</sup> but the company appears to have been soon disbanded once the fear of war had passed.

g) Criticisms of the "military element"

The use of the Engineers, both full-time and part-time, was not always popular with other members of the Corps, with the civilian officials of the Department, or with the public at large. Owen, by now a Lt. Colonel,<sup>11</sup> told Cole that he thought that "all officers, civil duties or not, should be paid alike".<sup>12</sup> Redgrave's warning to Cole about dissatisfaction on his "preference for Engineers", and Macleod's resentment,<sup>13</sup> reveal civilian feelings on the matter. The objections of the Engineers at the War Department that they were "left to do the dirty work",<sup>14</sup> when Donnelly and Fowke were being proposed for salaried work, in connection with the 1862 Exhibition, have also been noted.

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1 Cole MS Diary 31 January 1861, 1 and 13 December 1862

2 MS letter Northcote to Cole 21 December 1867

3 MS letter Northcote to Cole 8 April 1868

4 MS letter Cole to Northcote 9 April 1868

5 P.M. XXIII 203 (19 July 1883)

6 MS.M. 10.115

7 Printed Notice D.S.A.O.B. 1860 (n.d.) and MS.M 11.3

8 Another Printed Notice D.S.A.O.B. 1860 (n.d.) ("The Mac-leod of Mac-leod") and MS.M 11.5

9 D.N.B

10 Cole MS Diary 20 February 1860

11 Monthly Army List March-April 1860

12 Cole MS Diary 19 February 1860

13 Chapter III Section (a)(ii)

14 Cole MS Diary 24 April 1861



"Engineer officers are unsuited by study and experience", believed the Art Journal, when it gave publicity to the rumour that Scott was to be Cole's successor as the Director of the Museum.<sup>1</sup> The criticism that the use of Engineers as Inspectors removed opportunities of appointments from the teachers has been recorded.<sup>2</sup> The description of Donnelly as a "drill master", the charge of "pitchforking of Army officers into posts of £750 for doing next to nothing",<sup>3</sup> and accusations in the House that "the military element causes stagnation",<sup>4</sup> have also been detailed.

It was not, however, until the very end of the Department's career that criticisms of the "military influence" became more general and more virulent. The charges of the Magazine of Art, which were part of the campaign which led to the setting up of the Museums Committee,<sup>5</sup> included the "hope that the military element will be dispersed".<sup>6</sup> The Sappers still on detachment at the Museum were described as "secure from barrack life, military service, and war's alarms".<sup>7</sup> Donnelly had "initiated the principle of employing soldier pensioners as clerks".<sup>8</sup> The presence in the uniformed staff of attendants of many ex-rankers must also have given weight to the magazine's charge that the Department was "like an annexe to Chelsea Hospital".<sup>9</sup> While the Museums Committee, as has been noted, "offered no observations on the use of the Royal Engineers", it noted the fact that the "head officials at South Kensington, Dublin and Edinburgh ... are drawn from the Service".<sup>10</sup> (These were, of course, Donnelly, Plunkett and Murchison Smith.)

#### h) General influence

The logical setting out of regulations in the Directories, and the wealth of statistics in the Reports, give them the appearance of military documents. Beyond this, the stress on the "administrative" functions of the Inspectors, and the retention of the system of payments on results beyond the point of maximum effectiveness, suggest a conservatism which could be seen to be due to a "military attitude". (This is, of course, belied to some extent, so far as Donnelly is concerned, by the sidelights shown on his private character in his

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1 Art J. March 1873  
 2 Chapter X Section (b)(ii)  
 3 Engg. 29 November 1889 and 10 January 1890  
 4 Hd. CCCXIX (1887) 1546 (Conway)  
 5 Chapter V Section (g)  
 6 M. of A. 1897 79-81  
 7 Ibid. 1897-1898 666  
 8 Porter op. cit. III 359  
 9 M. of A. 1895-1896 446  
 10 S.C.M. (1898) xxxi

correspondence with Huxley, and by the tributes paid to him on his retirement and in his obituaries.<sup>1)</sup> "Military officers were well fitted for organisation in the early days", said the Art Journal, in its notably unenthusiastic comment when Donnelly retired.<sup>2)</sup> When the national suspicion of the Regular Army, in a country which had known no major war for the greater part of the century, is considered, it is, perhaps, remarkable that it was only at the very end of the period that criticism became so marked. On the other hand, the successful development of a national system, with all the complexity of administrative machinery which it involved, owed much to the experience, and skill, of a body of trained and dedicated men. On balance, it could be argued, the nation gained as a result.

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1 Chapter V Section (i)(ii)

2 Art J. 1899 288



**PART FOUR**

**Chapter XVIII      Conclusions and assessment**

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## CHAPTER EIGHTEEN

## CONCLUSIONS AND ASSESSMENT

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a) Summary of development

i) The administrative pattern

The Department owed part of its origins to private enterprise: the Great Exhibition was, in the words of its prime mover, "carried out by private means, self-supporting and independent of taxes".<sup>1</sup> As has been detailed, self-support was stressed, and government aid was limited, until it became apparent that the pure Smilesian gospel was not enough, if new challenges were to be met. Even the prophet Cole became a convert to the belief in ever-increasing State responsibility. The brief period of the Cole-Redgrave-Playfair triumvirate ended with the latter's departure, after consistent frustration, and the way was clear for the consolidation of Cole's system. The great innovation of the scheme of payments on results, the motivator and regulator of that system, was carried through to its ultimate limits by Cole's chosen heir, Donnelly. The scheme provided a means of applying financial controls, it afforded proof to Parliament of "value for money", it encouraged students, created schools, and brought forward teachers.

ii) The economic background

The early, rapid growth in Art Schools was followed, with a time lag of about five years, in the field of Science, but both areas saw a levelling off in the period from 1870 to 1880.<sup>2</sup> The era of relative economic and social stability, which extended from the time of the Great Exhibition until the 1870's, was succeeded by a period of recession and depression, which reached its peak in the 1880's. The development of German industry caused general concern. The great strides made by that country in the period following its unification, in the fields of steel, chemicals, and electrical engineering in particular, were obvious to all. The lesson that the Germans were relying on close relationships between industry and the schools, where technical education could be seen as a substitute for the "shop-floor tradition", and as a means of unlocking the trade secrets which had been accumulated in the older industrial regimes,<sup>3</sup> did not pass unnoticed. The Technical Instruction Commission was called into being by that connection, and commented upon the links, and the lessons for Britain, throughout its deliberations. The Royal Commission on the Depression in Trade noted that "we seem to be particularly

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1 Cole op. cit. I 116

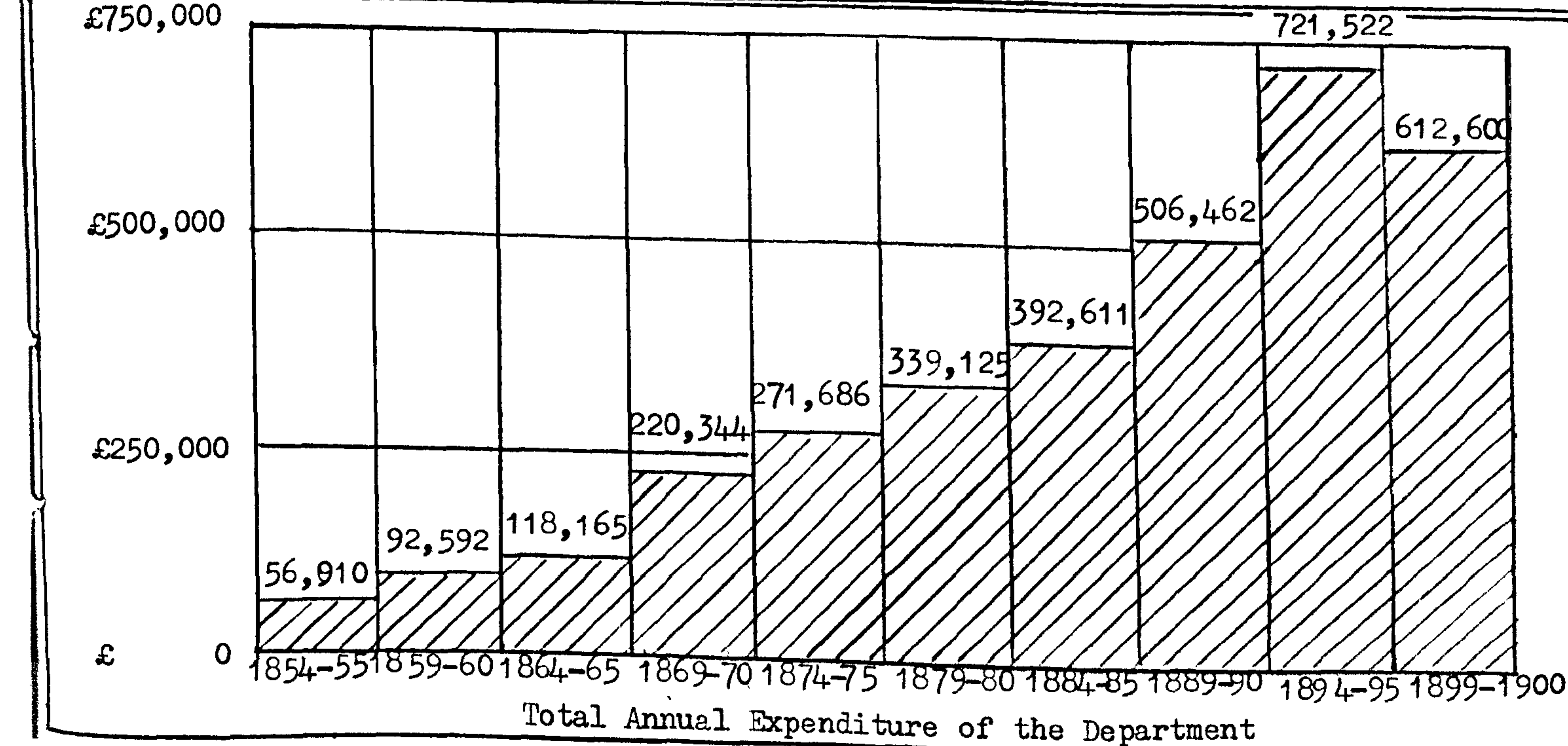
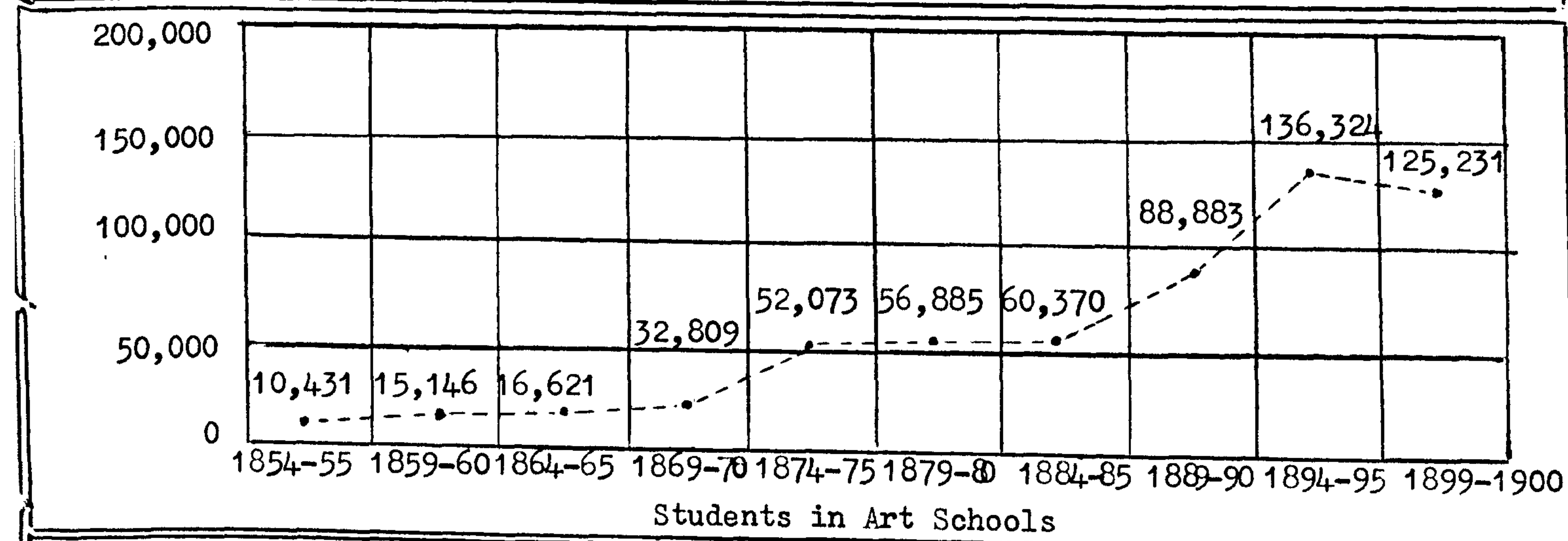
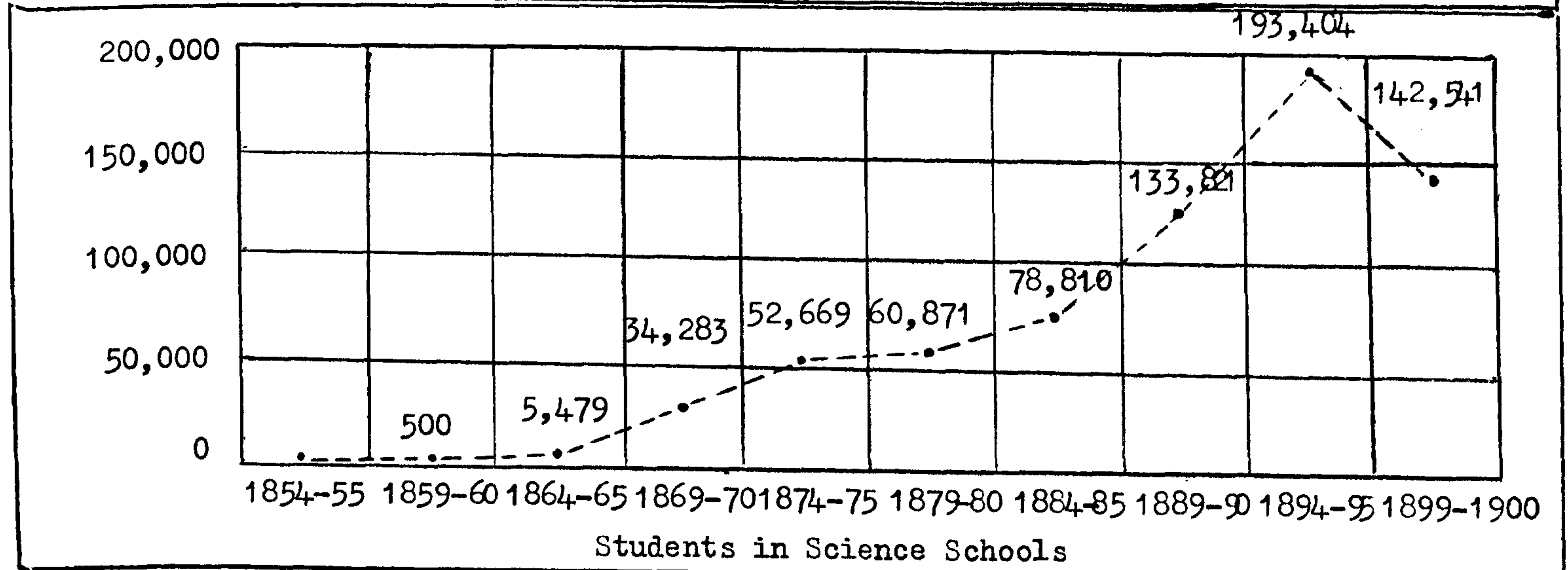
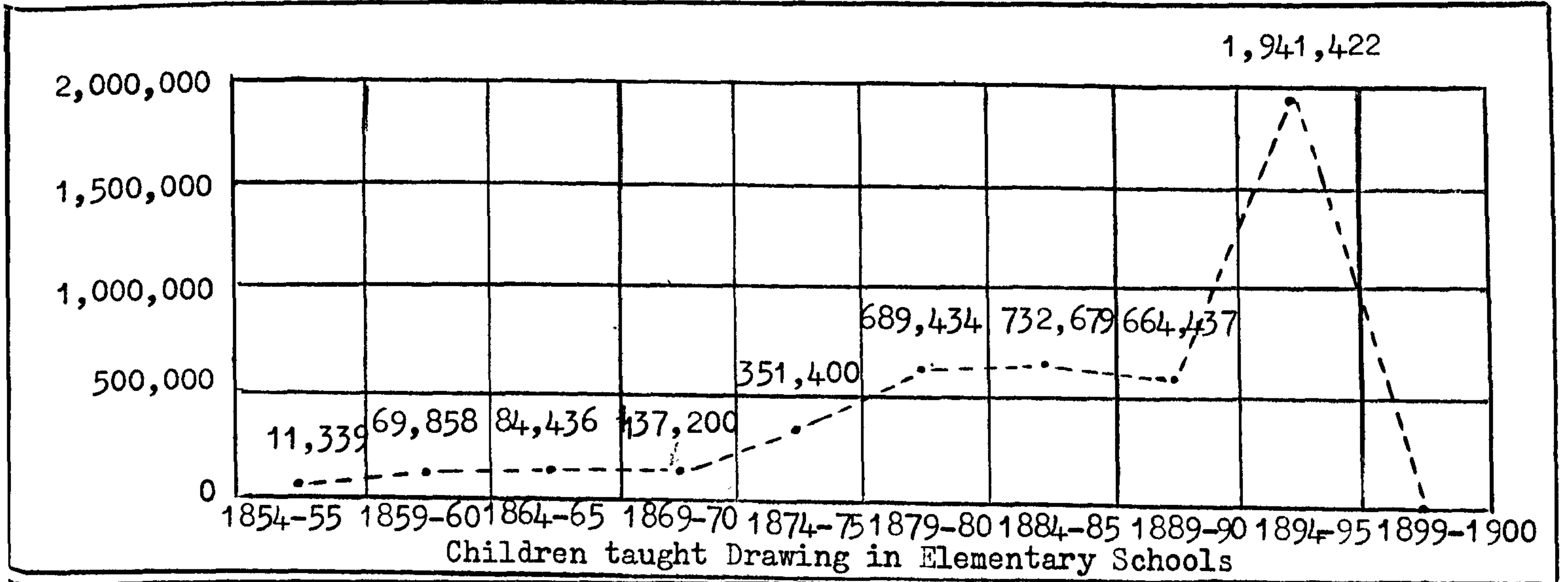
2 Table H

3 Derry and Williams A Short History of Technology (Oxford Clarendon Press 1960) 308 and 704



TABLE H

TOTAL ANNUAL EXPENDITURE RELATED TO NUMBERS TAUGHT IN SCIENCE, ART AND ELEMENTARY DRAWING





deficient in the matter of Technical Education".<sup>1</sup> To urge increased attention was one thing, to secure it was another, but the Department's services were there to be used, as they always had been. Under the influence of the pressure groups formed to encourage the development of Technical Instruction, and with the aid of the newly formed County Authorities, who were keen to extend the field of their activities, and who found additional finance in the "Whisky Money", there was a very great increase in development, and the objections of the manufacturers were slowly reduced. The basic deficiencies in primary education, which had proved to be such a barrier to further education in the Department's early days, were gradually overcome after the passing of the Education Act of 1870.<sup>2</sup> All these influences on developments would have been of little avail unless teachers had been prepared to man the classes. One equally important factor in the growth of Technical Education facilities, it is suggested, was that the elementary school teachers, who formed the majority of the teachers, were only too ready to form classes. The supplementary income these provided was most welcome, at a period when the full-time salaries of teachers showed a gradual decline in their position relative to the rest of the population.<sup>3</sup>

### iii) The "Age of Examinations"

As has been recorded, the Department retained its cherished system of payments on results beyond the point of maximum utility. The examinations which were the basis of the scheme were instituted at a time when such proposals were gaining general acceptance. The idea of external examinations for day-schools had its origins in that period.<sup>4</sup> The "missionary work" of the Reverend James Booth, and the inauguration of the examinations scheme of the Society of Arts, have received attention.<sup>5</sup> One of the proposals for the reform of the Civil Service, made by Trevelyan and Cole's friend Northcote, was that a scheme of entry by competitive examination should replace the old patronage system.<sup>6</sup> Cole was one of only four supporters of such a competitive

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1 P.P. (1886) XXIII 97 (xxiv) (Recommendations)

2 Chapter IV section (h) and Chapter V sections (e) and (h)

3 Table J

4 T.C.Acland Some account of the origins and objects of the New Oxford Examinations (London Ridgeway 1858)

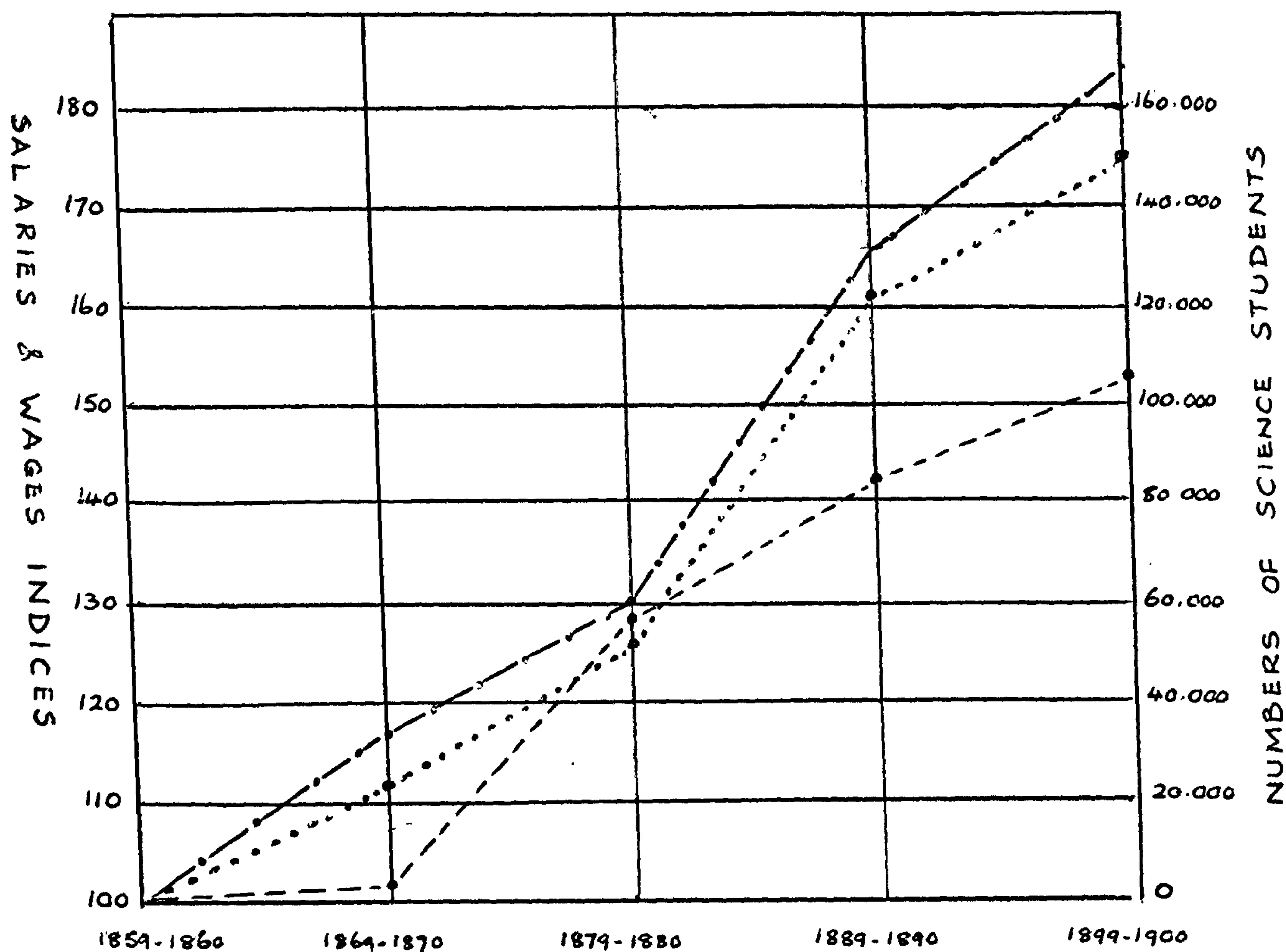
5 Chapter XVII Section (ii)

6 Emmeline Cohen The Growth of the British Civil Service 1780-1939 (London Allen and Unwin 1941) 161-172

Wyn Griffith The British Civil Service 1854-1954 (London H.M.S.O. 1954) 13-14

TABLE J

ANNUAL INCOME OF ELEMENTARY SCHOOL  
TEACHERS RELATED TO GROWTH IN  
SCIENCE CLASSES AND "REAL WAGES"



TEACHERS' ANNUAL INCOME INDEX      - - - - -  
 REAL WAGES INDEX                      . . . . .  
 NUMBERS OF SCIENCE STUDENTS      - . . . .

- NOTES (i) DETAILS OF TEACHERS' SALARIES FROM ANNUAL REPORTS OF THE COMMITTEE OF COUNCIL. FIGURES FOR 1889-90 AND 1899-1900 ARE FOR "PRINCIPAL" TEACHERS.  
 (ii) IDEALLY, NUMBERS OF SCIENCE TEACHERS SHOULD HAVE BEEN GIVEN, RATHER THAN NUMBERS OF SCIENCE STUDENTS. SUCH DETAILS WERE NOT, HOWEVER, GIVEN BY THE DEPARTMENT AFTER 1885-1886.  
 (iii) REAL WAGES INDEX FIGURES ARE TAKEN FROM MITCHELL AND DEANE "ABSTRACT OF BRITISH HISTORICAL STATISTICS," AND ARE THOSE BASED ON WAGES OF EMPLOYED WORKERS. THEY HAVE BEEN ADJUSTED TO GIVE A "BASE LINE" OF 100 FOR 1859-1860.



scheme among those who submitted memoranda to the Enquiry:<sup>1</sup> in his evidence, he argued strongly for such a system, and included details of the courses for Art teachers then in process of development.<sup>2</sup> The introduction of the scheme of competitive entry, which followed the establishment of the Civil Service Commissioners<sup>3</sup>, was seen as "probably the greatest influence of our time"<sup>4</sup> it ensured, among other things, that "gentlemen" continued to be chosen for the highest class, and that the education they received in the public schools was subjected to increasing scrutiny and suggestions for reform.<sup>5</sup> (The further fact that Cole, who argued for the system before its inception, continued to act as an eighteenth century patron in his own Department, has been noted.)

In developing its examinations, the Department not only had to bring forward the Examiners, who provided a link with higher education, and who created syllabuses which were, perhaps, the first attempts at the systematisation of such knowledge,<sup>6</sup> but it had to organise machinery for standardisation and administration. The carrying through into the schools of this system, through its inspectors, led, as has been seen, to a stress on the administrative function which lasted, with the system, for most of its existence.

#### iv) The growth of services

Although "Art" came first, and in the early years, made the most rapid progress, chiefly because of more ready acceptance by the middle classes, whose fees provided the finance for its continued development, "Science" had overtaken it by 1870, when, for the first time, the numbers of students in that division exceeded the numbers in the Art Schools.<sup>7</sup> This superiority continued for the rest of the century, with the exception of a brief period from 1875 to 1877.<sup>8</sup> From 1864, the "Science" statistics and details of development consistently came first in the Annual Reports.<sup>9</sup> There is a general dearth of statistics on the relative proportions of "artisan" students,<sup>10</sup> but the absence of middle class support in Science meant that there was a greater per capita expenditure on students in this area, while lower fees were consistently charged.<sup>11</sup>

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1 Cohen op. cit. 170

2 Reports and papers relating to the re-organisation of the Civil Service P.P. (1854-1855) XX (1) 244-258

3 The establishment of the Commissioners of the Civil Service P.P. (1854-1855) XLI (396)

4 Times 19 December 1858

5 Asa Briggs Victorian People (London Odhams 1954) 170

6 F.E. Foden Popular Science Examinations of the Nineteenth Century Journal of the Royal Institute of Chemistry (London 1963) 6-9

7 Tables IV and XVIII

8 Table I

9 D.S.A. 11th Report vi

10 Table XL

11 Table II



The "great debate" on whether the Science subjects to be encouraged by the Department should be "pure" or "applied", was affected by current views on state functions in educational provision: as has been recorded, while the Department consistently upheld the study of principles, as distinct from trade practice, it was prepared to enlist private support in the development of technological examinations outside its system, but linked with it. Its liberality in the interpretation of "Technical Education" in the era of the "Whisky Money" has also been noted. There was a parallel development, which has been detailed, in the field of Art, where an increasingly "practical" application of the principles of design brought more general acceptance of the Department's work, but the relative failure of its attempts to develop the study of Drawing in the elementary schools has been noted.

v) The Schools

So far as the Department's figures were concerned, annual distinctions were made between "Schools of Science" and "Schools of Art". In actual practice, with the development of the Technical Colleges which were encouraged by the local authorities, there was an increase, in the last decade of the century, in the relative proportions of the establishments where subjects from both divisions were taught.<sup>1</sup> Schools of this kind were in general of greater size than those Schools where subjects of only one division were offered.<sup>2</sup> There thus developed what was to become the general pattern of the earlier part of the twentieth century, the Technical College with an Art Department which had equal rank with other Departments, but the "separate" School of Art also formed an increasingly large proportion of the total. This trend has been reversed in recent years, with a separation once more into Colleges of Art and Colleges of Technology. Schools of all three kinds showed a general increase in size in the last decade.<sup>3</sup>

In the Schools where Science subjects predominated, there was a gradual increase in the range of subjects offered,<sup>4</sup> and in the proportion of larger schools,<sup>5</sup> with a general reduction in the proportion of "ephemeral" schools.<sup>6</sup> The geographical location of the Science Schools shows, at first, an undue superiority in Ireland, and a relative inferiority in Scotland, but this

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1 Table LVII

2 Table LVIII

3 Table LIX

4 Table VI

5 Tables VIII and XI

6 Table IX



imbalance gradually disappeared.<sup>1</sup> Irish Schools, on the whole, were usually much smaller in average size.<sup>2</sup> Single subject schools<sup>3</sup> showed a gradual decline. There was a general increase in the average number of papers taken by students in the examinations,<sup>4</sup> and this feature, coupled with the decrease in the proportion of students qualifying for the first time,<sup>5</sup> supports the Department's claim that there was "an increase in the practice of continuous study". The proportion of First class passes remained fairly constant, between 16 and 20%, for most of the period,<sup>6</sup> and provides an example of the consistency of the system of regulation. The gradual increase in the numbers of Organised Science Schools in the last decade,<sup>7</sup> after a slow start, as has been seen, led to complications in the field of secondary education, but these schools provided a foundation for developments in the new century.

The rapid growth in the numbers of Schools of Art in the first years of the Department's existence<sup>8</sup> has been noted. They gradually increased in average size, and for most of the period were, in general, much larger establishments than the Science Schools,<sup>9</sup> a reflection of their much more ready acceptance by the middle classes, of their need for more specialised accommodation, in the opinion of their time, and of the specialised training of their teachers. They also tended to be given more aid, in the form of building grants<sup>10</sup>, and in assistance with the purchase of materials.<sup>11</sup>

#### vi) The public image

This development has been seen against the background of the times. The consistently critical attitude of Parliament, based upon fear of an extension of powers, upon doubts on efficiency, or upon resistance to over-expenditure, has received comment, and the objections of the "quasi-scientific" and "artistic" organs of the Press have also been recorded. In official evaluations, however, it has been noted that Committees, and Commissions, showed, in general, more appreciation of the Department's efforts, until the "death-blow" of the Bryce Commission, and the quietus of the Museums Committee, in its final lustrum.

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- 1 Table VII
  - 2 Table VIII
  - 3 Table X
  - 4 Table XII
  - 5 Table XV
  - 6 Table XIII
  - 7 Table XVI
  - 8 Table XVII
  - 9 Tables XVIII and LI
  - 10 Table IIIB
  - 11 Table IIIA



vii) Relations with the Education Department

The general lack of co-operation with the Education Department has been noted. That Department was concerned with the "basic subjects" in the "education" of school children. The Science and Art Department owed its origins to the need for further education of craftsmen, tradesmen and scientific workers in specialised fields. "Secondary" for long meant "adult" to many of the educationists of the period. The recruitment of chief officials and Inspectors from the Universities, which was a consistent feature of Education Department policy, in contrast to the Department's pragmatical system of recruitment, accentuated the division. The closer Parliamentary control, the more restricted geographical field, and the absence of responsibility for the direction of institutions, were features of the Education Department's organisation which were not shared by the Department. The primary Department's opposition to the Department's sharing in the encouragement of science teaching in the elementary schools was partly based, no doubt, on fears of increased cost. (There was a very great increase in its own annual expenditure from the passing of the 1870 Act, and its sister Department's proportion of that expenditure grew relatively less.<sup>1</sup>) Opposition was also founded on the belief that science was an "adult" subject. It would be wrong to offer criticism on these grounds, since so few at the time appear to have understood the purpose of scientific study as a part of a liberal education.

It is not easy to understand why the Department was, on the other hand, allowed to develop Drawing in the elementary schools, unless this was due to a reluctance on the part of the "academic" H.M.I.s to assume responsibility for its regulation. As has been detailed, the transfer of the subject to the primary Department, its return to "South Kensington", and its eventual complete removal, exemplify the lack of consistent policy in this field. It is equally hard to comprehend the reasons why Manual Instruction, admittedly a "technical" subject, was placed under the Department in 1890.

The emphasis on "elementary" and "labouring class" education has been advanced as the reason why "secondary" schools were developed under the Department. In offering what was, in effect, "bribery", to follow more "modern" subjects, the Department helped to develop a viable alternative to the Grammar School, but at the cost of great confusion. There can be little

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1 Table LVI



doubt that the division of responsibility between the two Departments hindered developments in the whole educational field: as has been said, however, needs were not fully recognised, and the finance to meet the needs was not more readily provided, until the very end of the period, and, perhaps, not even then.

Kekewich, the first Civil Service Head of the Board of Education, revealed in his memoirs<sup>1</sup> that the early years of the new Department continued the old story. His relations with Gorst would appear to have been particularly bad, and he asserted that the "discordant elements at South Kensington", who "consistently opposed" him, assisted the politicians to "stab him in the back", to use his own phrase. The occasion was a projected reform of the College of Art. When Kekewich was forbidden by Gorst to interfere, he knew that his "authority over the Science and Art Department(sic) had gone", and his resignation soon followed. He believed that the members of the old Department had always wanted another chief. They got one, in Robert Morant!

#### b) Influences

##### i) General

No body so great in size, so long in existence, and so varied in its activities, could have left no influences behind, although H.G.Wells, writing ten years after its demise, could say "The Science and Art Department has vanished entirely from the world, and people are forgetting it with the utmost readiness and generosity". He went on to talk of "the more scientific and efficient machinery" which had "replaced the clumsy and limited bodies" of his youth.<sup>2</sup> Some people may have forgotten the Department, but its influences lived on. While its officials had endeavoured to develop practical work in science, the emphasis on "knowledge" which formed the basis of its examinations still remains, not, of course, entirely due to its influence, but because of an unwillingness to accept the fact that experience outweighs memorisation or the assimilation of inert material. In Art, it has taken the better part of the century to move away from formal exercises to more imaginative composition. When Stanley Spencer entered Maidenhead Technical College in 1907, he "grew tired of drawing the plaster casts", and his teacher<sup>3</sup> "looked askance at him when he said he would like to draw compositions ... letting students indulge in their fancy was a bit risky, he said".<sup>4</sup> Many can still remember the

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1 Sir G.W.Kekewich, The Education Department and After (London Constable 1920) 219-225

2 H.G.Wells The New Machiavelli (London John Lane 1911) 22

3 His name was Cole!

4 Maurice Collis Stanley Spencer (London Harvill Press 1962) 32



"memory drawing" and the "freehand drawing from solids" which featured in their elementary school Art lessons. The Department's success in its endeavours to influence "taste" is debatable: the attempt to develop contemporary styles which were based on those of the past too often resulted in hybrid mixtures. The designs produced as a result did little to wean the public away from the profusely decorated goods which appealed to them because of the reassurance they gave of their own security and purchasing power.

#### ii) Institutions

The Department's real worth is best seen in the areas in which it was an initiator, and in which it laid foundations on which later structures could be built, rather than in its contemporary influences. Thus, the Exhibitions with which it was connected served their purpose at the time, and two in particular, the Paris Exhibitions of 1867 and 1878, provided salutary reminders of the growth of foreign competition in readily assimilable form. The popularity of International Exhibitions in this century represents the continuation of a mode which the Department, and its officials, helped to systematise.

The institutions which it fostered exist as monuments to its foresight. The Imperial College of Science and Technology represents a marriage of the "pure" and the "applied" which could not have existed in the Department's life time. The Science Museum found a new and separate home from 1913. The Geological Museum, first to be founded, was the last to be properly accommodated, in 1935. The Victoria and Albert Museum, at last housed in premises which provide a worthy "casket for the jewels within", continues to be the "great bureau of standards"<sup>1</sup> which was the original aim of its founders, and its system of loans is of even greater importance now than when it began. It seems most fitting that the Museum was the first to open its doors to the public on Sunday mornings,<sup>2</sup> thus continuing the tradition of innovations which began with evening opening and Sunday opening. The last unit in the great Science and Art complex at South Kensington with which the Department was officially connected is the Royal College of Art, reformed after 1911,<sup>3</sup> and now in the forefront of design. Bodies with which its officials had "private" connections continue in the Royal Albert Hall and the Royal College

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1 Winslow Ames op. cit. 190

2 Times 28 March 1968

3 Report of the Inter-Departmental Committee on the Royal College of Art (1911)  
P.P. (1911) XVIII (549)



of Music. As has been recorded, bodies with which the Department was connected, the Royal Society of Arts, the City and Guilds of London Institute, and the Commissioners of the 1851 Exhibition, continue to thrive.

### iii) Tertiary Education

In the field of tertiary education, there is hardly a long-established College of Technology in the country which did not find its original encouragement from the Department. In university education, too, the Department stimulated many smaller bodies which eventually formed part of the Civic Universities which developed in the later years of the century, as well as acting as an intermediary in cases where Whitworth Scholarships were held in such institutions. Developments in Birmingham appear to have been confined to its Midland Institute.<sup>1</sup> Bristol's Merchant Venturers' Technical College, which had taken over the celebrated Trade School as a nucleus in 1885, provided competition for the University College with its evening classes.<sup>2</sup> In other areas, more direct encouragement was provided. Exeter University College included the School of Art, which had been founded in 1855.<sup>3</sup> The Yorkshire College of Science, Leeds, began with the usual assistance from the Department in 1874, and was the fore-runner of the University of Leeds.<sup>4</sup> In Liverpool, "an endeavour was made to raise a College of Science on the basis of the School of Science, which conducted evening classes in association with the Department of Science and Art", but "many of the Committee doubted whether the connection with South Kensington would not be fatal to the development of anything like a University grade of teaching".<sup>5</sup> Thus, the first attempts, in 1870, to use the "so called School of Science"<sup>6</sup> as a nucleus, failed, but later efforts were more successful, and the School of Science was, in fact, absorbed in the University.

Owens College, Manchester, took over the functions of the Manchester Mechanics' Institute, which had been assisted by the Department, when that institution closed,<sup>7</sup> and the connection of the College with the Department's

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- 1 F.W. Burstall and C.G. Burton Souvenir History of Mason Science College and the University of Birmingham (Birmingham Cond 1930)
  - 2 B. Cottle and J.W. Sherborne The Life of a University (Bristol Arrowsmith 1951) 1
  - 3 W.H.G. Armytage Civic Universities (London Benn 1955) 196
  - 4 (no author) A Short account of the growth of the University of Leeds (No publisher Leeds 1924) 9
  - 5 "One of the Honorary Secretaries" The First Page of the History of University College Liverpool (Liverpool Marples 1892) 8
  - 6 Richard Caton The Darkness and the Dawn in The making of the University (Liverpool Lyceum Press 1907) 7
  - 7 H.B. Charlton Portrait of a University (Manchester University Press-1951) 31



schemes for the provincial training of Science teachers has been noted.<sup>1</sup> When Nottingham University College was founded, its students "rendered a good account of themselves in the examinations of the City and Guilds and of the Government Science Department" (sic) in an early session.<sup>2</sup> Reading University College assimilated the School of Art on its establishment in 1892,<sup>3</sup> and worked well with the Department in its early years.<sup>4</sup> There were less happy consequences of collaboration at Sheffield. An attempt to obtain amalgamation in the Victoria University in 1898 was unsuccessful, because it was objected that teaching staff were "obliged to devote much work to preparation for the examinations of the Science and Art Department". It was felt that "more elementary teaching should in future take place outside the College", although it was admitted that this work was part of evening activities, and did not form part of the full-time curriculum.<sup>5</sup> The evening classes of the Technical School, which had connections with the University, owed much of their success to Department aid.<sup>6</sup> There was a more successful outcome at Southampton, where the Hartley Institution, founded in 1862, had a long record of successful development with Departmental aid.<sup>7</sup> Thus, of the Civic Universities which developed in England before the First World War, the Department had connections, however rudimentary, with all save two, and it thus ante-dated the action of the University Grants Committee by several years.

#### iv) Local and Central Government

The Department's efforts had important consequences in the field of local government. It encouraged the School Boards, however illegally, to venture into a field where they might, perhaps, have feared to tread without such seeming approval,<sup>8</sup> and the products of the Board Schools in their turn entered more "legal" evening classes in ever increasing numbers. The successful association of the Department with the County Authorities provided proof that local

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1 Chapter XI Section (B)(f)

2 Annual Report of the University College and Free Public Library Committee Nottingham 1888-1889 (Nottingham, Borough of Nottingham 1889) 4

3 University College Reading: Twenty-first Anniversary, 1913 (no publisher, Reading 1913) 8

4 R.C.S.E. A. 1333 (Abney)

5 Arthur W. Chapman The Story of a Modern University (Oxford University Press 1955) 456

6 Ibid. 78

7 The Hartley Institution and its proposed extension as a University College (Southampton Hartley Council 1887) 5

8 W.H.G. Armytage The centenary of South Kensington British Journal of Educational Studies V 1 (London November 1956) 81-82



administration of further education facilities was an efficient proposition: the consolidation and extension of such powers in the 1902 Education Act formed the corner-stone of the modern system of decentralised administration.

At the national level, it has been seen that the Department exercised some of the functions of the Ministry of Science which had been projected, although it had not been so designated, by James Heywood, in 1856,<sup>1</sup> and had been named by Lt. Colonel Alexander Strange, F.R.S., in 1874. "There must be a Minister of Science", Strange argued. "Research must be a national business", he said, and he wondered if "he should not also take Science, Education, Art and Music under his care", as part of the defence against the industrial competition of "complete and powerful (continental) systems".<sup>2</sup> Thus the Department, in obtaining some of the powers which were recommended by the Scientific Instruction Commission, preceded the formal establishment of such a Ministry,<sup>3</sup> by eighty years.

v) The "two cultures"

The Department represented an attempt to bridge the gulf between the "two cultures" which is a matter of such concern today. It must be admitted that it did not achieve a great deal of success in this. The treatment of the two "divisions" of Science and Art in this work reflects the actual state of affairs which continued to exist. The only real joint action lay in the combination of inspection in the greater part of the period. The confused position of "practical Drawing" shows that there was no real bridge: it could be taken as an Art subject or as a Science subject, but different standards prevailed. Only for a brief period was it combined under one head, and this attempt was soon given up.<sup>4</sup> Intermittent attempts to include the study of technical processes of production in the training of the Art teachers have been recorded. The officials, as has been noted, proceeded in a pragmatist rather than in a theoretical manner. The beliefs of the Positivist School, that social regeneration could be achieved by the applications of "science" to Society,<sup>5</sup> seem to have been given little attention, although Huxley was in

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1 Hd. CXLII (1856) 1263-1273

2 Times 6 February 1874. (The arguments were repeated in Nature 22 February 1874)

3 W.H.G. Armytage The Rise of the Technocrats (London Routledge and Kegan Paul 1965) 280 and 284

4 D.S.A. 33rd Report 43 and 44th Report 51

5 W.M. Simon European Positivism in the Nineteenth Century (New York Cornell University Press 1963) 83-89 and Auguste Comte's English Disciples Victorian Studies VIII 2 (Bloomington University of Indiana, December 1964) 161-172



the van of the opposition to the followers of Comte.<sup>1</sup> The action of the Department did, however, lay a ground-work for future developments.

vi) The modern examinations system

The Department's examination system, too, was a precursor of modern efforts at the standardisation of such activities. Its action in setting and marking examinations, and granting qualifications, was unique for an Education Department, and has not been repeated, but the attempts made in the early days of the Board of Education, to enlist national and regional agencies in the creation of an equivalent system, which led eventually to the development of the scheme of National Certificates,<sup>2</sup> continued on the foundations of experience which had been laid. The raising of "vocational" subjects in the public esteem must also be seen as being largely due to its efforts.

vii) Teachers and students

The Department's successes in raising a great body of teachers who acted as its "provincial agents", have been noted. The most important consequences in this field have been the "part-time" tradition, which still lingers, in the field of further education, but the attempts at teacher-training in both Science and in Art were not without subsequent value. The innovation of the Summer courses has been followed through into the whole field of education. It was, however, by its students that the Department was probably best remembered, and not always ungratefully. Its system provided a "ladder" for many thousands of young men and women who could not otherwise, in the conditions of the days, have entered professional employment. Its scholarship scheme, intentionally developed to compete with the demands of the labour market, involved a system of maintenance grants which could be seen as the basis of the modern "grant" system. The influence on the inauguration of the modern "text-book industry" was great. The Whitworth Scholarship system continues to thrive. The "sandwich-course" is now an accepted feature of further education.

The last word on the Department must go to John Perry, Goodeve's successor at the Royal College of Science. In a letter which he wrote to Engineering, two years after the inauguration of the Board of Education, he recalled his days as "an artisan student in Belfast in 1865". He said "I bless

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1 Sidney Eisen, Huxley and the Positivists Victorian Studies VII 4  
(Bloomington University of Indiana, June 1964) 337-358

2 Selby Bigge op. cit. 140.



the Science and Art Department ... For more than forty years, in towns remote from the Universities, it has been possible to get instruction in the sciences. It is the Science and Art Department which has so far saved our industries ... men trained under the Department will enable us to retain our industrial supremacy ... it has recently doubled its great efficiency ... and will continue to give those chances which it has offered since long before the sciences were taught in any English Public School".<sup>1</sup> He repeated these tributes in a speech at the College in the following month.<sup>2</sup> At the end of its existence, the Department's classes were being attended by a considerable proportion of the country's young people.<sup>3</sup> Untold thousands of grown men and women, in positions less eminent than that achieved by Perry, had used its classes in the preceding half century. The Department had been conceived in hope, had grown to maturity in the face of continual criticism, and had finally perished without much public mourning, but it cannot be said to have lived in vain.

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1 Engg. 19 September 1902

2 Nat. 23 October 1902

3 Table LII

## BIOGRAPHICAL APPENDIX

(Except where otherwise stated, material has  
been obtained from

The Dictionary of National Biography

and

Boase: Modern English Biography)



ABNEY, Sir William de W. (1843-1920)

Abney received his commission in the Royal Engineers in 1861. He served at Chatham as an instructor in Telegraphy, Chemistry and Photography. He became F.R.S. in 1876.<sup>1</sup> "Met Mr. Abney ... a chemist of Oxford (sic) ... very gentlemanly ... spoke highly of Donnelly", Cole noted in the last year of his life.<sup>2</sup> Abney's early work with the Department included responsibility for the better provision of laboratory facilities in Schools, and he was not loth to claim credit for improvements.<sup>3</sup> He also carried out a series of experiments to determine whether electric lighting should replace gas in the Museum, as a means of ensuring the better preservation of pictures.<sup>4</sup>

Abney was variously President of the Royal Photographic Society, the Royal Physical Society, and the Astronomical Society, Chairman of the Council of the Society of Arts, and Chairman of the Mathematics and Physics Sections at annual meetings of the British Association. Over one hundred original papers by him are listed in the Catalogue of the Royal Society: his "liking for putting his name to research papers", as has been recorded,<sup>5</sup> caused Donnelly much heart-searching when he was nominating his own successor as head of the Science Division. Abney was created K.C.B. in 1900. His retirement on reaching the statutory age in 1903 co-incided with the Morant accession. He continued to serve as an adviser to the Board of Education almost up to his death.

ACLAND, Sir Arthur H.D. (1847-1926)

As well as being a Liberal M.P., Acland also served on the West Riding County Council. He retired from active politics on the fall of the administration in 1895, and his poor health caused him gradually to give up other activities, including his membership of the N.A.P.T.S.E.<sup>6</sup> He was a member of the first Museums Committee in 1897, and he later acted for some years as President of the Consultative Committee of the Board of Education. In 1919 he succeeded his brother as nineteenth baronet.

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1 Nat. 13 April 1876  
 2 Cole MS Diary 20 January 1882  
 3 R.C.S.E. AA. 1243-1245  
 4 Hd. CCCXXIII (1888) 22  
 5 Chapter V Section (i)(iii)  
 6 Rec. VII 403 (October 1898)

ADDERLEY, Charles B. (Baron Norton) (1814-1905)

Adderley introduced an abortive compulsory Education Bill in 1860, when he was no longer in office.<sup>1</sup> He later served as Under Secretary for the Colonies from 1866 to 1868, and as President of the Board of Trade from 1874 to 1878. He was created Baron Norton in the latter year, in which he also served as President of the Social Science Congress.<sup>2</sup>

BARTLEY, Sir George C.T. (1842-1910)

Born in Hackney, the son of a War Office clerk, Bartley was a school-friend of Cole's son, Harry.<sup>3</sup> He entered the Department as a clerk in 1860,<sup>4</sup> and soon won a glowing testimonial from the Chief Clerk for his efficiency.<sup>5</sup> He quickly gained promotion.<sup>6</sup> He further ensured his future by proposing to Cole's daughter, Mary, and Donnelly was a groomsman at his wedding.<sup>7</sup> He also began to develop an interest in his father-in-law's Society of Arts. In May 1866, he was responsible for the proposal to erect memorial tablets on the former London residences of famous persons. The first of these, designed at South Kensington, was erected on Byron's former Cavendish Square house in 1867.<sup>8</sup>

Bartley was not, however, content with his rate of progress in the Department, even though he had become Official Examiner in Science, that is, the officer responsible for administration of examinations, in 1866. He "irritated" Cole by accusing him of "prejudice". "I told him he was insolent, hoped G<sup>d</sup> would help him, and that I was much aggrieved at his remarks", noted his father-in-law. Bartley made his peace two days later.<sup>9</sup> He was at this time working on his Schools for the People, a monumental volume which gave accounts of the work of the Department, the Education Department, and the voluntary agencies. He was also involved in a report for the Society of Arts on education in the East End. Its emphasis on "slums and beer"<sup>10</sup> seems to have alarmed Cole, who possibly feared that it would offend powerful interests, and he "consulted Mr. Forster on Bartley's Report on Bethnal Green".<sup>11</sup>

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1 Hd. CLIX (1860) 2021-2034

2 N.A.P.S.S. 1878 Report 1

3 Cole MS Diary 4 August, 5 September 1860

4 MS.M 11.2 (14 January 1860)

5 Ibid. 13.87 (24 April 1861)

6 Cole MS Diary 28 and 30 November, 11 December 1861

7 Ibid. 3 September 1862 and 4 January 1864

8 Hudson and Luckhurst op. cit. 230-231

9 Cole MS Diary 10 and 12 May 1868

10 Hudson and Luckhurst op. cit. 239-240

11 Cole MS Diary 12 January 1870



His activities in connection with a Penny Bank, and a scheme for buildings for the poor, led to questions by the Board on "Mr. Bartley's public services".<sup>1</sup> He also became joint editor of the Journal of the Women's Educational Union.<sup>2</sup> He addressed the British Association on "Thrift"<sup>3</sup> in 1877, and in the same year Cole advised him to "leave the Museum (sic) and be paid adequately".<sup>4</sup> He initially refused Sandford's offer of appointment as Assistant Science Director on condition that he gave up the Penny Bank, but later accepted it for one year,<sup>5</sup> with the result that his salary was raised from £450 to £625.<sup>6</sup> Cole acted as intermediary in arranging his terms of retirement.<sup>7</sup>

Bartley's "parliamentary ambitions"<sup>8</sup> led to an order which threatened dismissal to officials who spoke at political meetings,<sup>9</sup> but he resigned soon afterwards. His initial failure to be elected for his birth-place<sup>10</sup> was followed by a period of service as chief agent for the Conservative party.<sup>11</sup> He was elected for North Islington in 1885, and served as its member until 1906. (His commercial schemes must have prospered greatly. He was able to relieve Cole, who became a Director of his Bank, with a loan, when his father-in-law was worried over the failure of his Sewage Company.<sup>12</sup>)

His early days in the Commons were marked by criticisms of his former Department. He asked if the country was receiving "value for its money",<sup>13</sup> and charged that the staff was too large, "with the Art teaching and drawing deficient, and the science even more".<sup>14</sup> (This brought the comment that it was "amusing to witness ... attacks on the Office in which he spent so many well-paid years".<sup>15</sup>) His criticisms could have been provoked by a withdrawal of facilities for the loan of works of Art, which he exhibited in a "concert room ... admission only by tickets from Mr. Bartley", in his constituency. He was accused by T.P.O'Connor of using this as an electioneering device, but it was then stated by Hart Dyke that loans had been stopped "because a permanent Museum under local control had not been established".<sup>16</sup>

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1 P.M. K2.169 June 1874

2 Q.R. CXLVI January-October 1878

3 Br. Assn. 1877 Report

4 Cole MS Diary 10 February 1877

5 Ibid. 21 May 1878

6 Whitaker's Almanack 1878 and 1879

7 Cole MS Diary 30 November 1878 and 27 June 1879

8 Ibid. 5 February 1879

9 D.S.A.O.B. 31 January 1880

10 Cole MS Diary 12 February and 1 April 1880

11 Times 18 September 1910 (Obituary)

12 Cole MS Diary 11 July 1879

13 Hd. CCCXI (1887) 1420

14 Hd. CCCXXX (1888) 1402-1405

15 S. and A. December 1888

16 Hd. CCCXII (1887) 1827



Bartley's persistent attacks in later years were not on the Department, but on the governments of the day, for their tardiness in providing suitable Museum accommodation.<sup>1</sup> He was made K.C.B. in 1902, and was defeated in the Liberal "land-slide" in 1906. When he narrowly lost a bye-election at Hull in 1907, he retired from politics.<sup>2</sup> His wider and more lucrative career outside the Department makes him a notable figure: he needed his relationship with Cole to give him his start.

BOOTH, Reverend James (1806-1878)

Booth was the Principal of a College at Bristol, and Vice-Principal of the Liverpool Collegiate Institution, before he took up various country livings from 1854. He became F.R.S. in 1846, and F.R.A.S. in 1859, and was a leading theoretical mathematician of his day. He joined the Society of Arts in 1852, and in that year made the suggestions which led eventually to the publication of its Journal.<sup>3</sup> He was Chairman of the Council, and the Society's Treasurer, from 1855<sup>4</sup> until his resignation in 1857.

BRUCE, Henry A. (Lord Aberdare) (1815-1895)

A barrister and Liberal M.P., Bruce followed his period as Vice-President with the post of Home Secretary from 1869 to 1873. When he made way for Lowe in the latter office, he became Lord President, and was created Lord Aberdare. He held this office until January 1874. Made F.R.S. in 1876, he became the first Chancellor of the University of Wales in 1895. He was a member of the Social Science Association, and read papers to its Congresses in 1866 and 1875.<sup>5</sup>

BUCKMASTER, John C. (1823-1908)<sup>6</sup>

Buckmaster began life as a labourer, then became a joiner, and met the Prince Consort in connection with his work on the site of the Great Exhibition. He held his appointment as Organising Master of Science and Art classes until 1893. "Lord Booth vouched for Buckmaster's morality, but said that he was like an untamed Newfoundland dog", Cole recorded.<sup>7</sup> He had a brief period at the Museum as "Temporary Assistant Keeper on Probation",<sup>8</sup> but he soon returned

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1 Chapter IX Section (c)(v)

2 Times 18 September 1910

3 Wood op. cit. 273

4 Ibid. 373

5 N.A.P.S.S. Reports 1866 and 1875

6 Burke's Peerage

7 Cole MS Diary 25 February 1858

8 P.M. T.209 (1862)



to his provincial work.<sup>1</sup> "Buckmaster has been most successful here ... he resisted Russell's attacks on the Department with adroitness and good humour ... he has a wonderful form of addressing artisans, and with his stories and natural eloquence kept them thoroughly interested for an hour", Playfair reported from Edinburgh.<sup>2</sup> Buckmaster, like so many members of the Department, found another source of income. His text-books, and his work with Cole in the field of Domestic Economy<sup>3</sup> have been noted. The career with the Department of his eldest son, Charles Alexander Buckmaster, has been recorded. His second son, George Alfred Buckmaster, became a Professor of Physiology. His third son, Stanley Owen Buckmaster, entered the legal profession. He was made Lord Chancellor in 1915, and was created Viscount Buckmaster in 1933. Buckmaster's youngest son, Martin Arnold Buckmaster, was an Art Master and an Examiner for the Department.<sup>4</sup>

CARDWELL, Edward (Viscount Cardwell) (1813-1896)

Cardwell was Chief Secretary for Ireland from 1859 to 1861, Chancellor of the Duchy of Lancaster in the latter year, and Secretary of State for the Colonies from 1864 to 1866. He took over the office for which he is best remembered, Secretary of State for War, in 1868. On the fall of the government in 1874, he was created Viscount Cardwell of Ellerbeck, and he held no further office.

COLE, Alan Summerly (1846-1934)

Cole's second son entered Charterhouse for a brief period,<sup>5</sup> despite his father's reservations.<sup>6</sup> As has been recorded, he spent his working life in the Department, as Private Secretary to his father from 1867 to 1873, and later in a variety of capacities. He continued to serve in the Board of Education to 1908. He was made C.B. in 1902, and he was a Member of the Council of the Royal Society of Arts from 1914 to 1918.

COLE, Henry (1808-1882)

Before Cole entered the service of the Department, he had, as an Assistant Keeper, introduced reforms into the Record Office, involved himself

1 P.M. U.201 (1865)

2 MS letter Playfair to Cole 22 March 1868

3 Helen Sillitoe A History of the Teaching of Domestic Subjects (London Methuen 1933) 24, 27 and 29.

4 Burke's Peerage

5 ed. W.D. Parish List of Carthusians (Lewes Farncombe 1879) 23

6 Chapter IV Section (j)(ii)



in agitation for postal and railway reform, been a member of the Anti-Corn Law League, written fairy tales and travel books, and designed the first Christmas card. He was a friend of Thomas Love Peacock, Thackeray, and Francis Taylor Palgrave. His whole attitude to life is perhaps best summed up in the quotation found on the title page of his biography. Whether this was chosen by Cole, or by his children, "Whatsoever thy hand findeth to do, do it with all thy might"<sup>1</sup>, is the perfect epitaph for Henry Cole.

COWPER-TEMPLE, William F. (Baron Mount Temple) (1811-1888)

Nephew of Melbourne and step-son of Palmerston, Cowper's appointment as "the first Vice-President", from 1857 to 1858, was followed by the Vice-Presidency of the Board of Trade in 1858. He was Commissioner of Works from 1860 to 1866, after which he did not hold office again. He added the name Temple in 1869, and his authorship of the "Cowper-Temple" clause, which regularised the position with regard to religious teaching in the rate aided schools, after the 1870 Education Act, was probably his most significant contribution to the history of education in this country. He was created Baron Mount Temple in 1880.

DE LA BECHE, Sir Henry Thomas (1796-1855)

After service in the Army in the Napoleonic Wars, de la Beche began the construction of a geological map of the British Isles at his own expense, and was appointed first Director of the Geological Survey in 1832. He was President of the Geological Society in 1847, and was made K.C.B. in the following year.

DONNELLY, Sir John Fretcheville Dykes (1834-1902)

Donnelly was the only child of Lt. Colonel John Donnelly, Bombay Army. He was educated at Highgate School, entered the Royal Military Academy at Woolwich after a year's private tuition, in August 1849, passed out "first of the batch", and was commissioned Second Lieutenant in June 1853. He served with distinction in the Crimea from September 1854 to June 1856, and was recommended for the Victoria Cross.<sup>2</sup> (He later told Cole that during the campaign the French did everything to prevent his surveys of their trenches and "used to take him into custody every day".<sup>3</sup> He is first noted by Cole as "~~Donnelly~~" at a picnic with the Thackerays on Albury Heath,<sup>4</sup> and their

1 Ecclesiastes ix 10

2 This, and other details, have been taken from a Memoir by Colonel R.H. Vetch, supplied by Donnelly's grand-daughter, Miss Diana Donnelly.

3 Cole MS. Diary 1 May 1867

4 Ibid. 5 July 1858



intimacy ripened to the point where he was dining with Cole, asking his opinion on an article on "Shots" for the Cornhill Magazine, and agreeing to Cole's suggestions on an article on "Cannon Ranges".<sup>1</sup>

Donnelly resembled his patron, Cole, in his variety of interests and in his ability to take a leading part in a number of activities outside his work for the Department. His active membership of the Society of Arts, and his initiation of the schemes which were to lead to the development of its technological examinations and those of the City and Guilds of London Institute, have been noted. He was also involved in Cole's School of Music scheme, making a favourable impression on the Prince of Wales, but finding an implacable opponent in the Prince's brother, the Duke of Edinburgh, and eventually resigning because of the latter's opposition.<sup>2</sup> He was a Director of Cole's Sewage Scheme.<sup>3</sup> He was also employed, under the Privy Council, as a travelling Commissioner, to enquire into petitions for the grant of municipal charters. Between 1860 and 1878 he visited forty towns and held public enquiries, reporting on the petitions presented.<sup>4</sup> (It will be remembered that Cole, in his Journal of Design, had objected when Ambrose Poynter had combined his inspectorial duties with a private "side-line"). In November 1867, Buckingham, the Lord President, asked Cole if "Donnelly's boundary work interrupted his office work."<sup>5</sup>

Donnelly was particularly affected by the death of his first wife, in child-birth, in 1873, and years afterwards told his friend Huxley that he could never attend a dinner of the Royal Society without remembering that it was on such an occasion that he was called away to be given the tragic news.<sup>6</sup> He was "quite un-nerved", and Cole proposed his transfer to the Bethnal Green Museum,<sup>7</sup> but he returned refreshed from a holiday in Italy.<sup>8</sup> When he later wished to marry his dead wife's elder sister, he became involved in the "deceased wife's sister" question. Cole "wrote to the peers" on his behalf,<sup>9</sup> and he also enlisted the aid of Huxley,<sup>10</sup> but he did in fact re-marry in Switzerland, in 1881, before the confused position in the law was cleared up.<sup>11</sup>

1 Cole MS Diary 21 February, 9 and 13 March 1860

2 Ibid. 4 December 1874, 22 May and 4 June 1875

3 Ibid. 27 April 1879

4 Vetch op. cit.

5 Cole MS Diary 19 November 1867

6 MS letter Donnelly to Huxley 24 September 1894

7 Cole MS Diary 14 December 1873

8 Ibid. 13 January 1874

9 Cole MS Diary 27 April 1879

10 MS letters Donnelly to Huxley 21 April 1889 and Huxley to Donnelly 23 April 1889

11 The law permitting such a marriage in England was not passed until 1907.  
Halsbury's Laws of England (London Butterworth 1957 3rd Edition) IX 782



Donnelly lived less than three years in retirement, and died at the early age, for a Department official, of 67. He was buried, as Cole and Redgrave had been, in the Cemetery at Brompton,<sup>1</sup> near to the headquarters of the Department which he had served so well for most of his adult life.

DYKE, William Hart (1837-1931)

Hart Dyke was a Member of Parliament from 1865 to 1906, when he lost his seat in the Liberal "landslide" of that year. He served as Chief Whip to the party from 1874, became a Privy Councillor in 1880, and was Chief Secretary for Ireland in 1885. He last held office, as Vice President, from 1887 to 1892, when his defence of the Department's responsibility for decisions on what, in fact, would rank as "Technical Education", have been recorded.

FORSTER, William E. (1818-1886)

Forster, brother-in-law to Matthew Arnold, was Under Secretary for the Colonies in 1865. As Vice President from 1868 to 1874, he carried the Education Act of 1870 which led to accusations that he had betrayed his party on the question of the voluntary schools. After holding the post of Chief Secretary for Ireland from 1880 to 1882, he never again held office.

FOWKE, Francis Reid (1823-1865)

Fowke was commissioned Second Lieutenant in the Royal Engineers in 1842, and held the rank of Captain, R.E., from 1854 until his death. Unlike Donnelly, he did not serve in the Crimea. He did not wish his relations with the Department to be impaired by his assignment in connection with the buildings for the Exhibition of 1862, and he drew no salary while so engaged.<sup>2</sup> The universal condemnation of the buildings, and Fowke's lampooning, by Punch, have been recorded.

Fowke is best remembered today for his designs for the Albert Hall, which had to be brought to the notice of Samuel Redgrave, who had attributed them to General Scott (who carried out the construction to Fowke's designs) in his Dictionary of British Artists.<sup>3</sup> He was also responsible for the design of the Edinburgh Museum of Industrial Art. Fowke was clearly, from frequent references in the Diaries, a personal friend of Henry Cole, and their visit

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1 Vetch op. cit. (Over 500 people attended the funeral)

2 Cole MS Diary 25 January 1861

3 Engr. 30 January 1874 (Letter by F.R.Fowke, Fowke's son)



in 1865 to the Paris Industrial Museum, and their Report on its collections, was later seen by Nature as the origins of the scheme for a Science Museum.<sup>1</sup>

In the year of Fowke's death, Cole had to "talk very seriously to Fowke about the neglect of his office, which he took very well".<sup>2</sup> His death, at the early age of 42, was a blow to the older man.<sup>3</sup> Fowke was a "man of science" in a truly nineteenth century sense of the phrase. In addition to his work as an architect and Inspector, he developed an improved form of pontoon, and he was the inventor of the first folding camera.

GORST, Sir John Eldon (1835-1916)

At one time an Inspector of National Schools in New Zealand, Gorst returned to Britain to become a Conservative M.P. and barrister. With Lord Randolph Churchill, Drummond Wolff and Arthur Balfour he formed the "Fourth Party". Solicitor General in 1885, he became Under Secretary for India in 1886, First Secretary to the Treasury in 1891 to 1892, and was the last Vice President and first President of the Board of Education, from 1895 to 1902. He declared his allegiance to Free Trade in 1906, but lost his seat, and his defeat in 1910 marked the end of his political career. He was created K.C.B. on his appointment to office in 1885.

GREY, Charles (1804-1870)

Second son of the second Earl Grey, he served as a Liberal M.P. from 1831 to 1847, and acted as private secretary to his father during the latter's Premiership from 1830 to 1834. He had previously served in the Army, and became a Lieutenant Colonel by purchase and by exchange by the age of 26. He was appointed as one of the Queen's Equerries soon after her accession in 1837, and was Private Secretary to the Consort from 1849 until the Prince's death in 1861. He then served the Queen in the same capacity until his own death. He became a full General in 1865. With Phipps, he acted as the intermediary in intimating the Consort's wishes to Playfair and to Cole. (In all the correspondence which has been preserved, there is only one letter signed by Albert, that in which he offered Playfair the post of gentleman-in-waiting at the conclusion of the Great Exhibition.<sup>4</sup> )

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1 Nat. 17 August 1876

2 Cole MS Diary 18 May 1865

3 Ibid. 4 December 1865

4 MS letter Albert to Playfair 15 October 1851

HADEN, Francis Seymour (1818-1910)

Haden was a surgeon and amateur etcher, whose interest in Art led to his appointment as "Honorary Surgeon" to the Department in 1857,<sup>1</sup> when he offered "to give gratuitous advice to any officer of the Department" and was "to be sent for in any case of emergency".<sup>2</sup> He "remonstrated when he was not named with the officers" at the time of the formation of the Volunteer Company in 1860,<sup>3</sup> and further discussed his connection with the Department with Cole in 1862.<sup>4</sup> The only reference to his professional services is in a letter from poor Redgrave to Cole, when, during one of the former's illnesses, he received from Haden "a dose fit for a horse ... I was punished for hours with it".<sup>5</sup>

In 1867 Haden published a pamphlet on Paris Jurors: a letter to Henry Cole Esq., C.B.<sup>6</sup> in which he charged that the Department's action in appointing an "intemperate associate" as an Assistant Juror for the Paris Exhibition of that year had been against his expressed wishes, and that he had been treated in a cavalier manner by Cole and his subordinates. (The "intemperate associate" had died in Paris on 28 April of that year). Haden therefore resigned as Juror and as Honorary Surgeon. The Board recorded "painful correspondence" on the subject.<sup>7</sup> Haden, who was knighted in 1894, later became a supporter of Robinson, as has been recorded. He stayed with him at his country house, Newton Manor, and travelled with him in Spain in 1877 and 1878.<sup>8</sup> He was a brother-in-law of James McNeill Whistler, and their estrangement, later featured in The Gentle Art of Making Enemies,<sup>9</sup> may have formed a common bond in the friendship which developed between Cole and the American in the last year of Cole's life.

HENLEY, Joseph W. (1793-1884)

Henley was President of the Board of Trade on two occasions, in 1852, when he was Cole's first political chief (apart from the official's brief period under Labouchere) and again from 1858 to 1859, by which time the Department had passed to the control of the Lord President.

- 1 The D.N.B. records the date as 1851.
- 2 D.S.A.O.B. 30 November 1857
- 3 Cole MS Diary 19 January 1860
- 4 Ibid. 5 August 1862
- 5 MS letter Redgrave to Cole 13 August 1866
- 6 (London, James Torvey 1867)
- 7 P.M. C2. Mus. 259, D2. Mus. 65
- 8 D.N.B.
- 9 Gaunt Aesthetic Adventure 31, 37-40



HAMILTON, Lord George Francis (1845-1927)

Hamilton was Under Secretary of State for India in 1874, Vice President from 1878 to 1880, First Lord of the Admiralty from 1885 to 1892, and Secretary of State for India from 1895 to 1903. He also served as Chairman of the London School Board in 1894, and as Chairman of the Royal Commission on the Poor Law from 1905 to 1909.

ISELIN, John Francis (1832-1884)

Iselin, a Cambridge graduate, was employed by Cole as tutor to his son, Harry, in 1860,<sup>1</sup> at a time when he was a Mathematics master at Stockwell Grammar School.<sup>2</sup> Cole seems to have seen Iselin as a young man of promise, although it took him several months to record his name correctly: he consistently referred to him as "Mr. Islin".<sup>3</sup> The first permanent appointment which Cole could offer Iselin was in connection with the projected 1861 Exhibition, although he was advised not to resign his post until the offer could be made a firm one.<sup>4</sup> Iselin was soon dining at the Cole's, and "playing chess with Hennie",<sup>5</sup> Cole's second daughter, Henrietta. In early April Cole told Iselin that he would be named as Deputy Manager of the Exhibition at a salary of £500. As a young man with prospects, "Mr. Iselin made Hennie an offer and was accepted by her".<sup>6</sup> As a prospective member of the family, Iselin became "occasional Inspector for Science" in October of that year.<sup>7</sup> Playfair reported, after Iselin's first tour of Scotland, that he had "an endless power and zeal for work in him. He wants experience of the world and of men, but he is clearly getting it".<sup>8</sup> He combined these duties, in typical Department fashion, with his Exhibition work, but he must have allowed the zeal which Playfair had noted to outrun his discretion. He sent a letter to The Times in April, 1862,<sup>9</sup> without Cole's authority, which announced the arrangements for honorary season tickets for Jurors and Foreign Commissioners. This seems to have annoyed Cole intensely,<sup>10</sup> and when he talked with Iselin on the subject, "he was most despondent and wished to resign".<sup>11</sup>

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1 Cole MS Diary, Accounts Page, 1860 (Iselin received £5.19.0. for his services in the first six months of the year).

2 Boase

3 Cole MS.Diaries 1860-1861

4 Ibid. 1 February 1861

5 Ibid. 5 February and 27 March 1861

6 Ibid. 21 April 1861

7 Ibid. 30 October 1861

8 MS letter Playfair to Cole 11 February 1862

9 Times 12 April 1862

10 Cole MS Diary 17 April 1862

11 Ibid. 18 April 1862

Matters appear to have gone from bad to worse, and finally Cole told his prospective son-in-law that unless he could govern his temper, he would not be allowed to marry Henrietta.<sup>1</sup> There are no further "personal" references to Iselin in the Diaries, and the marriage did not, in fact, take place. As has been recorded, however, Iselin eventually became a permanent Inspector in succession to Fowke, and it would appear that it was Cole who supported him in the face of Donnelly's preference for a Royal Engineer. He served in that capacity until 1880, when he came Assistant Director of the Science Division, a post which he held until his death, after months of illness, at the age of 52, in 1884.

LABOUCHERE, Henry (Baron Taunton) (1798-1869)

Labouchere served as Vice President of the Board of Trade in 1835, and was Under Secretary for War and the Colonies in 1839. He was President of the Board of Trade from 1839 to 1841, and from 1847 to 1852, when, for a very brief period, he was Cole's political chief. He was Secretary of State for the Colonies from 1855 to 1858, and was created Baron Taunton of Taunton in August 1859. He was one of the Commissioners of the 1851 Exhibition, and Chairman of the Schools Inquiry Commission from 1867 to 1868. He was the uncle of W.H. Labouchere, long an enemy of the Department, and left to him a considerable fortune.

LEFEVRE, Sir John George Shaw (1797-1879)

Lefevre was Joint Assistant Secretary to the Board of Trade from 1841, and became Deputy Clerk of the Parliaments in 1848, and Clerk in 1855. A F.R.S. from 1820, he was able to introduce Cole to the heads of the Board of Trade, as has been recorded. Made K.C.B. in 1857, he was Vice Chancellor of London University from 1842 to 1862.

LEVESON-GOWER, Granville George (Second Earl Granville) (1815-1891)

Granville served in a succession of governments from 1840. He was at the Foreign Office on three separate occasions, from 1851 to 1852, 1870 to 1874, and 1880 to 1885. On the resignation of the Derby administration in 1859, he was asked to form a government, but was unsuccessful, and served for the second time as Lord President. He was F.R.S., K.G., and served as Chancellor of the University of London in 1856.

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1 Cole MS Diary 28 April 1862



LINGEN, Sir Ralph R.W. (Baron Lingen) (1819-1905)

A contemporary of Stafford Northcote at Trinity College, Cambridge, Lingen gained a First in Classics, and became a barrister, before his entry to the Education Department, which he left on his appointment as Permanent Secretary to the Treasury in 1869, when he was awarded the C.B. Made K.C.B. in 1878, he was created Baron Lingen on his retirement in 1885. As has been recorded, relations between the two Departments could have been much worse than they actually were, in view of Lingen's notorious irritability.

LOWE, Robert (Viscount Sherbrook) (1811-1892)

Lowe had been Joint Secretary of the Board of Control, from 1852 to 1855, and Vice President of the Board of Trade and Assistant Postmaster-General from 1855 to 1858, before his service as Vice President from 1859 to 1864. His evidence to the Royal Commission on the Universities, and his "conversion to science" have been recorded, as has his opposition to Cole during his period as Chancellor of the Exchequer from 1868 to 1873. He served as Home Secretary from 1873 to 1874, was created Viscount Sherbrook in 1880, and received the G.C.B. in 1885.

MACLEOD, Norman (1812-1895)

The "Macleod of Macleod" was a Scottish Landowner, educated at Harrow and in France and Germany, who encumbered his estates in giving relief to his tenants in the great famine of 1847. In 1853<sup>1</sup> he joined the Department as Assistant Secretary, and Cole noted "McLeod" (sic) "for the first time".<sup>2</sup> (The following year, he told Cole of his connections with Trevelyan of the Treasury, who had been a contemporary at Harrow, but admitted that he had not mentioned this matter when he had asked for the post, as "he knew Cardwell's views on the Treasury Report"<sup>3</sup> of that year, to which reference has been made.) Within a matter of weeks, Cole noted a dispute between Macleod and Wornum, who objected to taking orders from the Scot.<sup>4</sup> Playfair and Redgrave appear to have been critical of Macleod's connections and "county pursuits". Playfair told Cole, "No news of Macleod. May turn up tomorrow",<sup>5</sup> and Redgrave informed Cole, with some asperity, "Macleod is away, shooting".<sup>6</sup> (Macleod was a Sergeant at Arms in the Royal Household from 1853 until his death).

1 The D.N.B. gives 1852

2 Cole MS Diary 1 October 1853

3 Ibid. 5 April 1854

4 Ibid. 18 November 1853

5 MS letter Playfair to Cole 6 August 1856

6 MS letter Redgrave to Cole 11 November 1858



Cole's preference for Donnelly, which has been noted, could have been based upon the belief that the Engineer was more efficient than the Scot. Within a few months of his arrival in the Department he "sent by mistake a circular to the newspapers which would have cost £200 as an advertisement: Luckily it was stopped in time".<sup>1</sup> He later told Cole that he was "often quite puzzled with all the details".<sup>2</sup> Despite Cole's reservations, Redgrave told him a year later that "McLeod" (sic) "is up to all the business, and manages quite well".<sup>3</sup> In 1866, however, with Poole and Bartlett, two of the clerks, he "quite forgot letters being sent out".<sup>4</sup> Cole's reference to his "ignorance of our printed accounts" during the Simkins case has been noted.

Macleod's concern at "the bringing forward of the Royal Engineers", his "glumness", and his initial willingness to resign on pension, in 1864 and 1865, have been recorded, but his firmness and refusal "to give way" in 1869 were to lead eventually to his succession to Cole on the reorganisation of the Department. His later partisanship of Robinson, his treatment of Alan Cole, and of Donnelly, have been noted, and he could have been behind the official rebuke to Alan on his Saturday Review article on Music, and the publication of the rules on engagement in political affairs which led to the departure of Bartley. Macleod was sixty years of age when he succeeded Cole. He appears to have been a shadowy figure, who would seem to have left the actual promotion of Art and of Science to their supervisors in a way which Cole would never have done. He had, however, a much longer period of retirement than had Donnelly, dying at the age of 83, after his retirement at the age of 70.

MONTAGU, Lord Robert (1825-1902)

Montagu was an early advocate of a School of Naval Architecture. He served as Vice President from 1867 to 1868, but received no further office, and retired from Parliament in 1880.

MOSELEY, Henry (1801-1872)

An Anglican clergyman, Moseley was a Professor at Kings College, London, from 1831 to 1844, and an H.M.I. from 1844 until his appointment as Canon of Bristol in 1853. He held this position until his death. He became F.R.S. in 1839, was a Juror of the 1851 Exhibition, and one of the first Examiners of the

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1 Cole MS Diary 16 February 1854

2 Ibid. 1 March 1854

3 MS letter Redgrave to Cole 23 May 1855

4 Cole MS Diary 15 June 1866



Society of Arts. He worked for many years to develop the Bristol Trade School, which was the most successful attempt to develop full-time teaching in the Department's early years.

MUNDELLA, Anthony John (1825-1897)

Mundella became a Privy Councillor in 1880, served as Vice President from 1880 to 1885, and was later President of the Board of Trade, from 1892 to 1894. His defence of the Department, and his pride in the progress in Technical Education, have been noted.

MURCHISON, Sir Roderick I. (1792-1871)

After service in the Napoleonic Wars, Murchison worked as a geologist, becoming F.G.S. in 1825, and F.R.S. in 1826. His succession to the post of Director of the Geological Survey on the death of de la Beche in 1855, the disappointment which this caused to Playfair, and his opposition to schemes to develop the School of Mines as a College of Science, have been recorded. He became K.C.B. in 1863, was made a baronet in 1866, and after lingering for eleven months after an attack of paralysis in November 1870, died the following year.

NORTHCOTE, Stafford Henry (Earl of Iddesleigh) (1818-1887)

Northcote was Private Secretary to Gladstone when the latter was Vice President of the Board of Trade, in 1842, and continued as legal assistant to the Board when Gladstone left, although he was not admitted to the Bar until 1847. He served in this capacity until 1850, and was thus involved in Cole's schemes for the School of Design, as has been recorded. (Their correspondence was to continue almost to the time of the official's death.) He was a Joint Secretary of the Great Exhibition from 1850 to 1851. After his great work with Trevelyan for the reform of the Civil Service, he entered Parliament as a Conservative in 1855. President of the Board of Trade in 1866, he was Secretary for India in 1867, Chancellor of the Exchequer from 1874 to 1880, and then became Leader of the Opposition from 1880 to 1885. Created Earl of Iddesleigh in the latter year, he was Foreign Secretary for six months in 1886 to 1887, dying suddenly on the day of his resignation from the office.

OWEN, Sir Philip Cunliffe (1828-1894)

Owen originally joined the Royal Navy, but retired for health reasons,<sup>1</sup> and joined the Department as a Junior Clerk in 1855.<sup>2</sup> (His brother was Captain Owen, R.E., and Cole made frequent references in his Diaries at this time to "old Captain Owen": these connections were no doubt instrumental in securing for him the appointment.) Owen became Deputy General Superintendent of the Museum in 1859. He told Cole "of many offers to leave the Museum" in 1863:<sup>3</sup> the following year he was promoted Keeper. In 1867, a possible appointment as Manager of the projected Alexandra Palace was suggested:<sup>4</sup> he received a further promotion, to the post of Assistant Director, in 1868. When he took Gladstone round the Museum in 1871, he was careful to tell Cole that he had given a good account of the services of the Department and of its Secretary.<sup>5</sup> He was instrumental in obtaining the loan of the Wallace Collection, which gave the Bethnal Green Museum such a sound beginning.<sup>6</sup>

As Cole's successor as Director, he was "determined to be master of his own ship".<sup>7</sup> He believed that he had Sandford's support against Macleod,<sup>8</sup> but it was Sandford who compelled him to give up his arrangements to manage the Philadelphia International Exhibition, after the Lord President, Marlborough, had said "Owen or I must be master".<sup>9</sup> He later obtained a year's leave of absence for this purpose, however. This brought the comment that if he could be spared from the Museum for such a period, his continued services must be in doubt.<sup>10</sup> There was an estrangement when Cole believed that nearly the whole Kensington establishment was against him. "My old and respected chief, Sir Henry Cole, has not time to remember his oldfriends", a pencilled note in Owen's handwriting<sup>11</sup>, to "My Lord Duke!"<sup>12</sup> recorded at the time.<sup>13</sup>

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1 Art J. 1891 213

2 MS.M 3.67 (13 January 1855)

3 Cole MS Diary 11 December 1863

4 Ibid. 25 December 1867

5 MS letter Owen to Cole 31 August 1871

6 MS letter Owen to Cole 1 April 1872

7 Cole MS Diary 10 October 1874

8 Ibid. 27 January 1875

9 Ibid. 25 December 1875

10 Art J. 1877 61

11 Alone among the Department personalities of the period, Owen wrote a very fair and readable hand.

12 MS note 29 July 1877

13 One speculates on the appearance of this item in the Cole Correspondence.



Owen's efficiency seems to have been in some doubt. It was clear to Cole "that he does not attend to his work, or does not comprehend" at one time,<sup>1</sup> and Redgrave once told Cole that he had been "hearing Owen, not talking to him".<sup>2</sup> "Owen's votes for catalogues all spent, as usual", Cole noted in 1871.<sup>3</sup> He was inefficient in his estimates for the International Loan Exhibition in 1876, Donnelly believed.<sup>4</sup> He was indiscreet, Redgrave thought.<sup>5</sup> His innocent, but foolish, involvement with Robinson in the "Hillingdon armour affair"<sup>6</sup> lends credence on this point. "He was in no sense a remarkable man ... he possessed much tact, but neither genius nor talent ... although he rapidly learned about the new Art of running Exhibitions ... and did this work very well", thought the Engineer. Characteristically, the periodical commented on his "love of foreign decorations", and added that "he was a strictly honourable gentleman ... with no trace of jobbery attached ... he was thus out of place at South Kensington ... it is an inscrutable mystery how he preserved his name unspotted".<sup>7</sup>

PHIPPS, George Augustus Constantine (Marquess of Normanby) (1819-1890)

A Liberal M.P. from 1847 to 1857, Phipps became Controller of the Royal Household in July 1851, and was its Treasurer from 1853 to 1858. He thus acted on occasion as the intermediary in correspondence between the Consort and the officials Cole and Playfair. He served as Lieutenant Governor of Nova Scotia from 1858 to 1863, and after he succeeded his father as second Marquess of Normanby in the latter year, served successively as Governor of Queensland (1871-1874), New Zealand (1874-1879), and Victoria (1879-1884).

PLAYFAIR, Lyon (Baron Playfair) (1818-1898)

After education at the University of St. Andrews and University College, London, Playfair obtained his Ph.D. after working under Liebig at Giessen in 1839 and 1840. He was the Chemical Manager of a calico works at Clitheroe, before he became Professor of Chemistry at the Manchester Royal Institution, from 1842 to 1845. Playfair was dissuaded from taking up an appointment in Canada by Robert Peel, who obtained a post for him, with the assistance of

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1 Cole MS Diary 2 November 1865

2 MS letter Redgrave to Cole n.d.

3 Cole MS Diary 24 March 1871

4 Ibid. 20 December 1876

5 Ibid. 4 September 1875

6 MS letter Donnelly to Playfair 20 November 1897

7 Engr. 30 March 1894 (Obituary)



de la Beche, as Chemist to the Geological Survey.<sup>1</sup> After service for a number of Commissions and Committees, he was appointed Professor of Chemistry at the new School of Mines. He became F.R.S. in 1848. He first became a Liberal M.P., as the member for the Scottish Universities, in 1868. He served as Postmaster-General from 1873 to 1874, and was Vice President in 1886. Playfair was Chairman and Deputy Speaker of the House of Commons from 1880 to 1883, and moved his constituency, to become Member for South Leeds, from 1885 to 1892. He was made K.C.B. in 1883, created first Baron Playfair of St. Andrews in 1892, and G.C.B. in 1895.

REDGRAVE, Richard (1804-1888)

Redgrave entered the Schools of the Royal Academy in 1826, and was a private drawing teacher from 1830. He became a member of the staff of the old School of Design in 1847. He was a member of the Royal Academy from 1851, and served as Surveyor of the Crown Pictures from 1857 to 1880. He refused a knighthood when he retired from this post, and contented himself with the C.B. Redgrave, like Cole and, later, Donnelly, was buried at Brompton.

ROBINSON, George F.S. (Earl de Grey and Ripon and Marquess of Ripon) (1827-1909)

A Liberal M.P. from 1853 to 1859, Robinson succeeded his father, who served as Prime Minister (as Viscount Goderich) for a brief period in 1827, as Earl of Ripon, in January 1859, and his uncle, as Earl de Grey, in November of the same year. He held a succession of offices in the governments of Gladstone and his Liberal successors, which included the tenure of the post of Lord President, as has been recorded, from 1868 to 1873. He was created Marquess of Ripon in 1871, after his service as Chairman of the "Alabama" Commission. In September 1874, he announced his conversion to Roman Catholicism, and his fellow convert, and a former officer of the Department, J.H. Pollen, became his Private Secretary in 1876. He last held office, as Lord Privy Seal, from 1905 to 1908.

ROBINSON, Sir John Charles (1824-1913)

After art training in Paris, and service as Head of the Hanley School of Design, Robinson joined the staff of the Central School, as has been detailed, in 1852, and later moved on to work with Cole and Redgrave in building up the Museum. After his retirement, as a result of quarrels which have been recorded, he used his expertise to gain a prosperous position as an Art dealer.

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<sup>1</sup> MS letter Playfair to E.A. Bowring n.d. 1851



While only one side of the story is given by Cole's Diaries and Donnelly's contributions, Robinson's evidence to the Museums Committee suggests an almost overwhelming conceit, although it must be admitted that he was giving vent to the accumulated grievances of thirty years. Just at the time of the "Armour affair", Robinson carried on a correspondence in The Times, in which he charged that the Museum was guilty of grave neglect of its water colours, but this was refuted by Donnelly, among others. Donnelly said that a Committee had been appointed to go into the whole matter,<sup>1</sup> and he told Huxley at this time that he had "written to The Times and given Robinson a facer".<sup>2</sup>

Robinson's appointment as Surveyor of the Queen's Pictures, in succession to Richard Redgrave, as has been noted, must have been a blow to Henry Cole in the last months of his life, and was probably due to Robinson's connections with Gladstone. Robinson's general influence in the world of Art cannot have been helpful to the Department.

RUSSELL, John Scott (1808-1882)

Russell was a civil engineer and Naval architect, who became F.R.S. in 1847. He was Secretary of the Society of Arts from 1845 to 1850, and, as has been noted, was instrumental in introducing Cole to the Society. With Northcote, he served as Joint Secretary of the Great Exhibition. He is perhaps best known as the designer of The Great Eastern steamship. He later agitated for Technical Education. He published a work which proposed a "great English Technical University",<sup>3</sup> and opposed the Department and his old friend Cole. He died at Ventnor "in somewhat reduced circumstances" in the same year as Cole, with whom he also shared the year of his birth.

SANDFORD, Francis R.J. (Baron Sandford) (1824-1893)

Sandford entered the service of the Education Department from Oxford, and worked with Lingen and Temple, later Archbishop. His appointment as Secretary of the two Departments gave him, potentially, more power than any of his predecessors. He does not appear to have used his position to achieve any great unification. After his retirement in 1884, he served as a member of the Cross Commission, and held minor office in Conservative administrations.

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1 J.C. Robinson Letters to "The Times" on Light and Water Colours. (London Parnell 1887) (Donnelly's letter of 12 April 1887)

2 MS letter Donnelly to Huxley 13 April 1887

3 J. Scott Russell Systematic Technical Education for the English People (London Bradbury Evans 1849)

He was made K.C.B. in 1879, became a Privy Councillor in 1885, and was created Baron Sandford in 1891. He became noted as a strong defender of the voluntary schools.<sup>1</sup>

WOOLLEY, F. Joseph (1817-1889)

Woolley's services in connection with the School of Naval Architecture, and his later comments on the Department's examinations, for which he served as an Examiner, have been noted. He had originally been in Holy Orders, but relinquished them by Deed in 1873, although he "continued to the last to be a devout worshipper in the Church of England".<sup>2</sup> He was the most important figure in the foundation of the Institution of Naval Architects.<sup>3</sup> He also served as an Examiner of Wrecks, and on the occasion of his illness in 1883, a question was asked in the House on the circumstances in which he had received a fee for special services, when he had been on sick-leave for twelve months on full pay and personal allowance. The answer on that occasion was that he had received the fee for a service during a brief return to duty, but that he had had a further break-down and had now retired.<sup>4</sup>

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1 W.H.G. Armytage "F.R.J. Sandford" Bulletin of the John Rylands Library XXX, 1 (Manchester January 1948) 110-119

2 Nat. 28 March 1889

3 Engr. 29 March 1887

4 Hd. CCLXXIX (1883) 227-228



**STATISTICAL APPENDIX**

TABLE I  
COMPARATIVE PROGRESS OF SCIENCE AND ART TEACHING  
1860 - 1900

Academic Year	Students in Science Schools	Students in Art Schools	Total Students	Percentages	
				Science	Art
1860-1861	1,330	13,360	14,690	9.1	90.9
1865-1866	6,835	19,279	26,114	26.2	73.8
1870-1871	38,015	37,295	75,310	50.5	49.5
1875-1876	57,988	59,131	117,119	49.5	50.5
1880-1881	61,177	54,618	115,795	52.8	47.2
1885-1886	94,838	65,620	160,458	59.1	40.9
1890-1891	148,408	100,031	248,439	59.7	40.3
1895-1896	180,410	136,768	317,178	56.9	43.1
1899-1900	142,541	125,231	267,772	53.4	46.6

(Figures do not include students in Central Schools)

TABLE II  
RELATIVE COSTS AND FEES  
1865 - 1900

Academic Year	Art Students					Science Students				
	Total	£ POR.	Head	£ Fees	Head	Total	£ POR.	Head	£ Fees	Head
1865-1866	15,597	4,112	5-2	18,672	24-0	6,835	5,002	14-6	.	.
1870-1871	18,596	10,706	10-6	22,432	25-3	38,015	18,830	9-9	5,061	2-4
1875-1876	27,973	15,834	10-9	33,348	24-0	57,598	42,591	14-8	11,253	4-0
1880-1881	31,592	16,415	10-3	35,452	22-6	61,177	43,519	14-2	12,120	4-0
1885-1886	65,620	37,229	12-0	46,515	14-2	94,838	73,142	15-5	21,609	4-3
1890-1891	100,031	43,785	8-9	50,101	10-2	148,408	102,570	13-9	28,591	3-11
1895-1896	136,768	73,222	10-0	54,851	6-9	177,700	157,916	17-7	35,312	4-0
1899-1900	125,231	74,680	11-0	.	.	142,541	98,985	13-9	.	.

Students in Art Night Classes, where fees and costs were lower, are not included in Art totals until 1885-1886

From 1895-1896, the Department did not include students in Organised Science Schools in totals or costs

The "payment on results" costs per head for Science students for the whole period, and for Art students from 1890, are those given by the Department in Annual Reports

No details of fees are given for 1899-1900

In both tables, the figures for 1899-1900 do not include students in schools in Scotland.



TABLE III A  
AID WITH EXAMPLES  
AND MATERIALS  
1854-1890

Academic Year	Art			Science		
	Examples £	Furniture £	Total £	Laboratories £	Apparatus £	Total £
1854-1855	.	.	1,008	-	-	-
1859-1860	.	.	417	.	.	101
1864-1865	.	.	188	.	.	93
1869-1870	.	.	1,230	.	.	567
1874-1875	.	.	.	.	.	1,043
1879-1880	.	.	1,092	.	.	708
1884-1885	1,529	802	2,331	1,112	1,146	2,258
1889-1890	1,037	.	1,037	1,114	1,516	2,630

From 1893-1894, aid was given to Schools in Ireland only.

TABLE III B  
BUILDING GRANTS TO SCHOOLS OF SCIENCE AND ART  
1861-1893

Academic Year	Schools aided		Amount of aid		Total amount of aid £
	Science	Art	£ Science	£ Art	
1861-1862	-	1	-	285	285
1862-1863	-	-	-	-	-
1863-1864	-	1	-	560	560
1864-1865	-	2	-	1,000	1,000
1865-1866	-	1	-	500	500
1866-1867	-	1	-	422	422
1867-1868	-	1	-	500	500
1868-1869	-	1	-	450	450
1869-1870	-	2	-	656	656
1870-1871	1	-	344	-	344
1871-1872	3	4	565	1,300	1,865
1872-1873	1	1	375	500	875
1873-1874	4	4	678	964	1,642
1874-1875	-	-	-	-	-
1875-1876	-	2	-	864	864
1876-1877	-	2	-	859	859
1877-1878	-	1	-	327	327
1878-1879	3	3	648	894	1,542
1879-1880	1	3	409	1,076	1,485
1880-1881	1	2	171	650	821
1881-1882	1	3	326	966	1,292
1882-1883	3	3	970	1,175	2,145
1883-1884	2	3	476	854	1,330
1884-1885	-	3	-	1,195	1,195
1885-1886	3	7	1,127	2,398	3,525
1886-1887	5	4	2,062	1,494	3,556
1887-1888	6	4	2,375	1,420	3,795
1888-1889	6	8	2,187	3,798	5,985
1889-1890	-	-	-	-	-
1890-1891	5	6	1,764	2,460	4,224
1891-1892	3	3	1,252	1,467	2,719
1892-1893	6	6	2,296	2,086	4,382
TOTALS	54	82	18,025	31,120	49,145



TABLE IV  
PROGRESS OF SCIENCE INSTRUCTION

Academic Year	Schools	Students under instruction (January)	Students examined (May)	Centres
1859-1860	9	500	.	.
1860-1861	38	1,330	650	35
1861-1862	70	2,534	1,239	55
1862-1863	75	3,111	1,581	69
1863-1864	91	4,666	2,070	84
1864-1865	120	5,479	2,633	103
1865-1866	153	6,835	2,980	134
1866-1867	212	10,230	4,520	167
1867-1868	300	15,010	7,092	261
1868-1869	523	24,865	12,988	437
1869-1870	799	34,283	16,515	570
1870-1871	908	38,015	18,750	597
1871-1872	948	36,783	19,568	653
1872-1873	1,182	48,546	24,674	832
1873-1874	1,336	53,050	27,513	922
1874-1875	1,299	52,669	27,985	938
1875-1876	1,426	57,988	33,289	1,051
1876-1877	1,348	55,927	35,342	955
1877-1878	1,297	57,230	40,086	931
1878-1879	1,355	59,515	34,111	994
1879-1880	1,391	60,871	39,083	1,056
1880-1881	1,360	61,177	38,837	1,098
1881-1882	1,402	68,581	50,621	1,117
1882-1883	1,421	72,054	54,204	1,135
1883-1884	1,463	78,336	52,866	1,209
1884-1885	1,542	78,810	54,241	1,249
1885-1886	1,682	94,838	58,476	1,343
1886-1887	1,684	103,088	67,620	1,476
1887-1888	1,952	112,808	74,038	1,626
1888-1889	2,159	131,313	86,054	1,877
1889-1890	2,063	133,821	86,318	1,829
1890-1891	2,164	148,408	93,659	1,922
1891-1892	2,553	180,410	105,038	2,231
1892-1893	2,754	193,431	110,458	2,464
1893-1894	2,602	183,120	101,396	2,350
1894-1895	2,673	193,404	113,398	2,352
1895-1896	2,583	196,185	99,818	2,156
1896-1897	2,424	197,796	101,526	2,320
1897-1898	2,023	158,370	114,632	2,223
1898-1899	1,887	151,220	104,500	2,261
1899-1900	1,803	167,180	82,160	1,627

"Private" students are included in the figures for students entered for examination.

The figures from 1893 do not include day students.

TABLE V  
PROPORTION OF "INSTRUCTED" STUDENTS  
ENTERED FOR EXAMINATION

Academic Year	Students under instruction (January)	Students examined (May)	Percentage of students entered
1865-1866	6,835	2,980	43.6
1870-1871	38,015	18,750	49.3
1875-1876	57,988	33,289	57.4
1880-1881	61,177	38,837	63.5
1885-1886	94,838	58,476	61.7
1890-1891	148,408	93,659	63.2
1895-1896	196,185	92,246	47.0
1899-1900	167,180	79,434	47.5



TABLE VI  
SIZES OF SCIENCE SCHOOLS AND CLASSES  
1865-1900

Academic Year	Schools	Classes	Students	Average size of class	Average size of School	Average classes per School
1865-1866	153	.	6,835	-	44.7	-
1870-1871	908	2,584	38,015	14.7	41.9	2.84
1875-1876	1,426	4,931	57,988	11.8	40.7	3.46
1880-1881	1,360	4,839	61,177	12.6	44.9	3.56
1885-1886	1,652	5,862	94,838	16.2	51.3	3.55
1890-1891	2,164	8,568	148,408	17.3	68.6	3.96
1895-1896	2,583	10,500	196,185	18.7	72.1	4.09
1899-1900	1,986	.	167,180	-	84.2	-

TABLE VII  
LOCATION OF SCIENCE SCHOOLS

Academic Year	England and Wales			Scotland			Ireland		
	Total Schools	% of total	% of popn	Total Schools	% of total	% of pop.	Total Schools	% of tot.	% of pop.
1870-1871	612	67.8	72.3	50	5.5	10.6	241	26.7	17.1
1880-1881	979	70.8	74.4	162	11.7	10.8	240	17.5	14.9
1890-1891	1,549	71.2	76.8	336	15.5	10.7	289	13.3	12.5

TABLE VIII  
RELATIVE SIZES OF SCIENCE SCHOOLS

Academic Year	England and Wales			Scotland			Ireland			All Schools		
	Total	+100	%	Total	+100	%	Total	+100	%	Total	+100	%
1866-1867	208	17	8.2	12	4	33.3	70	1	1.4	290	22	7.5
1889-1890	1,481	320	21.6	326	67	20.6	269	11	4.1	2,976	398	19.2
1894-1895	2,224	554	24.9	365	77	21.1	158	8	5.1	2,747	639	23.3

TABLE IX  
"EPHEMERAL" SCHOOLS 1869-1873

Date of existence	Number of Science Schools	Not in existence following January	Percentage closed by following January
January 1869	523	224	42.8
January 1870	799	401	50.2
January 1871	910	352	38.7
January 1872	948	184	19.4

During this period, schools which had ceased to exist since the issue of the last Annual Report were shown in the current Report in italicised print. It is thus possible to make this calculation, but only for this period.



TABLE X  
SUBJECTS TAUGHT IN SCIENCE SCHOOLS

Academic Year	Total Schools	As percentage of total			
		One subject only	Two to five subjects	six to ten subjects	over ten subjects
1865-1866	144	31.3	59.0	9.0	0.7
1870-1871	903	23.2	67.4	7.8	1.6
1875-1876	1,426	23.9	64.5	9.5	2.0
1880-1881	1,382	16.2	69.9	10.7	3.2

TABLE XI  
SIZES OF SCIENCE SCHOOLS  
1889-1898

Academic Year	Total Schools	Schools with over one hundred students	Schools with over one hundred students as percentage of schools
1889-1890	2,076	398	19.2
1890-1891	2,575	469	18.2
1891-1892	2,709	538	19.7
1892-1893	2,871	610	21.3
1893-1894	2,844	596	20.9
1894-1895	2,747	639	23.3
1895-1896	2,604	565	21.7
1896-1897	2,561	589	23.0
1897-1898	2,251	551	24.5

These figures represent students on whom payments were made. The size of actual establishments was probably higher. The figures are based on those given for January each year. Where there is a discrepancy between these figures and those shown as a total in Annual Reports, this is most probably due to the fact that not all Schools would eventually enter students for examination.

TABLE XII  
PAPERS TAKEN IN SCIENCE EXAMINATIONS  
1865-1900

Academic Year	Students examined	Papers taken	Average of papers per student
1865-1866	2,980	5,466	1.83
1870-1871	18,750	38,098	2.32
1875-1876	33,289	69,162	2.08
1880-1881	38,837	72,300	1.86
1885-1886	58,576	114,432	1.97
1890-1891	93,659	179,549	1.93
1895-1896	92,246	231,000	2.50
1899-1900	82,160	151,279	1.84

TABLE XIII  
FIRST CLASSES IN SCIENCE EXAMINATIONS  
1875-1900

Academic Year	Papers taken	First classes	Percentage of first classes
1875-1876	69,162	12,453	18.1
1880-1881	72,300	13,176	18.2
1885-1886	114,432	22,725	19.9
1890-1891	179,549	28,448	15.8
1895-1896	231,000	41,919	18.2
1899-1900	151,279	35,044	23.9



TABLE XIV/A  
PAPERS IN SUBJECTS  
OF THE SCIENCE EXAMINATIONS

Note With the exception of the year 1864-1865, the table shows only those subjects for which there were over one thousand examination entries in a year.

Subject	1864-1865		1869-1870		1874-1875		1879-1880		1884-1885		1889-1890		1894-1895		1898-1899		Overall	
	Papers	Pstn.	Papers	Pstn.	Papers	Pstn.	Papers	Pstn.	Papers	Pstn.	Papers	Pstn.	Papers	Pstn.	Papers	Pstn.	Papers (Average)	Pstn.
Academic Year	1864-1865		1869-1870		1874-1875		1879-1880		1884-1885		1889-1890		1894-1895		1898-1899		Overall	
Acoustics, Light & Heat	244	6	1,984	9	6,405	5	4,155	8	4,270	9	6,432	9	4,047	14	3,962	12	3,900	13
Agriculture	-	-	-	-	-	-	4,396	7	4,074	10	5,053	10	3,024	16	(882)	-	3,500	15
Animal Physiology	548	3	3,677	3	7,372	3	5,827	4	7,090	6	7,718	8	-	-	-	-	5,400	10
Applied Mechanics	-	-	-	-	-	-	1,834	14	3,602	12	4,207	13	4,351	12	3,633	14	3,500	14
Building Construction	(74)	(17)	2,606	7	1,574	10	3,117	10	3,834	11	4,262	12	7,195	11	9,136	7	4,000	12
Elementary Botany	-	-	-	-	1,301	11	1,872	13	1,974	15	2,739	16	3,118	15	2,780	15	2,300	17
Geology	170	10	-	-	-	-	1,641	15	1,586	16	1,856	17	1,224	18	(769)	-	1,200	19
Human Physiology	-	-	-	-	-	-	-	-	-	-	-	-	7,208	10	5,946	10	6,600	9
Hygiene	-	-	-	-	-	-	-	-	-	-	4,027	14	8,386	8	8,126	8	6,800	8
Inorganic Chemistry	946	1	2,644	6	5,816	6	6,329	3	9,120	3	17,769	3	23,787	3	15,648	3	9,100	4
Inorganic Chemistry (Practical)	-	-	-	-	-	-	2,564	11	4,602	8	8,238	7	15,128	5	10,378	6	8,200	5
Magnetism & Elec.	291	5	2,554	8	10,335	2	10,229	2	10,659	2	14,013	5	11,117	7	8,041	9	7,500	6
Mathematics	182	8)	3,953	2	6,695	4	11,598	1	13,392	1	25,261	1	29,692	2	24,158	1	12,800	1
Mining	-	-	-	-	-	-	-	-	-	-	1,135	18	2,898	17	2,425	16	2,200	18
Practical Plane and Solid Geometry	608	2	3,273	5	2,952	8	3,364	9	5,061	7	20,979	2	33,810	1	12,652	5	9,200	3
Physical Geography Physiography	121	11	4,397	1	14,699	1	4,958	6	7,709	5	14,972	4	15,737	4	21,408	2	9,300	2
Steam	-	-	-	-	1,021	12	1,267	16	2,518	13	3,121	15	4,300	13	3,671	13	2,600	16
Vegetable Physiology	229	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	20
Zoology	182	8)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	21
Mech. & Machine Drg.	293	4	3,601	4	4,645	7	5,328	5	8,946	4	12,403	6	13,886	6	13,358	4	7,000	7
Theoretical Mechanics	-	-	-	-	1,765	9	2,049	12	2,375	14	4,503	11	8,028	9	5,361	11	4,000	11



TABLE XIV B  
SCIENCE SUBJECTS  
EXAMINATION ENTRIES

"Group"	Subject	1896-1900					Average to the nearest 100 over five years	
		1896	1897	1898	1899	1900	Subject	"Group"
Drawing	P.P.S. Geometry	15,134	13,356	12,713	12,652	11,628	13,100	34,200
	Mach.Constr. & Drg.	11,442	10,896	11,614	13,358	12,976	12,100	
	Bldg. Construction	7,331	7,433	8,060	9,136	9,238	8,200	
	Naval Architecture	640	664	753	873	1,036	800	
Chemistry	Inorganic Chemistry	16,509	16,651	15,461	15,468	15,071	15,800	27,300
	Inorg. Chem. (Prac).	9,411	10,152	10,262	10,378	10,226	10,100	
	Organic Chemistry	659	686	664	881	836	700	
	Org. Chem. (Prac).	701	653	610	825	714	700	
-	Mathematics	23,378	24,740	23,674	24,158	23,399	23,900	23,900
Physics	Sd.Lt. & Heat (Adv).	1,743	1,530	1,495	1,745	1,653	1,600	21,100
	Sd.Lt. & Heat (El).	2,174	2,581	2,086	3,962	2,112	2,600	
	App. Mechanics	3,707	3,556	3,629	3,633	3,598	3,600	
	Mag. & Electricity	8,350	7,242	7,752	8,041	7,030	7,700	
	Theor. Mechanics	6,477	6,364	5,630	5,361	5,143	5,600	
-	Physiography	13,137	13,603	20,836	21,408	21,179	16,600	16,600
Biology	Botany	3,475	3,486	2,911	2,780	2,650	3,100	9,700
	Zoology	263	207	69	68	55	100	
	General Biology	316	466	258	262	195	300	
	Human Physiology	7,241	6,975	5,486	5,946	5,281	6,200	
-	Hygiene	8,792	9,517	7,757	8,126	8,666	8,500	8,500
Mining	Geology	1,145	946	724	769	631	900	4,500
	Mining	2,959	2,763	2,523	2,425	2,341	2,600	
	Mineralogy	109	133	126	148	151	100	
	Metallurgy	478	395	413	445	463	500	
	Metallurgy (Prac).	371	365	359	391	370	400	
Nautical	Steam	3,752	3,547	3,393	3,671	3,585	3,600	4,000
	Navigation	489	374	271	233	191	300	
	Nautical Astronomy	135	129	97	124	136	100	
-	Agriculture	2,318	1,853	975	882	725	1,400	1,400



TABLE XV  
STUDENTS QUALIFYING FOR THE FIRST TIME  
IN SCIENCE EXAMINATIONS

Academic Year	Students examined	Successful for the first time	Percentage
1880-1881	38,837	17,246	44.4
1881-1882	50,621	16,910	33.4
1892-1893	106,660	23,018	21.6
1893-1894	99,818	20,328	20.2
1894-1895	103,163	22,542	21.9
1895-1896	91,300	16,551	18.1

Note Although the Department claimed that the figures showed a gradual decrease in the percentage of students qualifying for the first time, which is borne out by the table, figures on which such calculations can be based were published only for the years shown.

The totals do not include "private" students

TABLE XVI  
ORGANISED SCIENCE SCHOOLS 1892-1899

Academic Year	Day Schools	Evening Schools	Total Pupils	Average size of school
1892-1893	70	9	9,530	121
1893-1894	89	13	13,460	132
1894-1895	110	5	14,550	129
1895-1896	144	.	16,654	116
1896-1897	156	.	19,963	128
1897-1898	159	.	21,193	134
1898-1899	169	.	23,450	144
1899-1900	183	.	24,639	134

TABLE XVII  
FOUNDATION OF SCHOOLS OF ART  
1842-1858

Year of foundation	Schools	Total 1842-1851	Year of foundation	Schools	Total 1852-1858
1842	2	18	1852	3	43
1843	3		1853	12	
1844	2		1854	8	
1845	1		1855	2	
1846	2		1856	5	
1847	2		1857	4	
1848	1		1858	9	
1849	1				
1850	1				
1851	3				

Source Individual returns from Schools of Art, D.S.A. 6th Report 114-142

TABLE XVIII  
 PROGRESS OF PROVINCIAL ART SCHOOLS AND CLASSES

Academic Year	Schools of Art		Average size	Art Night Classes		Average size
	Schools	Students		Classes	Students	
1852-1853	20	.	.	-	-	-
1853-1854	33	6,336	.	-	-	-
1854-1855	48	10,431	217.3	-	-	-
1855-1856	53	12,231	.	-	-	-
1856-1857	56	12,339	.	-	-	-
1857-1858	68	13,943	.	-	-	-
1858-1859	78	17,418	.	-	-	-
1859-1860	85	15,146	178.2	-	-	-
1860-1861	87	15,483	.	-	-	-
1861-1862	90	15,908	.	-	-	-
1862-1863	90	16,480	.	-	-	-
1863-1864	91	16,555	.	-	-	-
1864-1865	92	16,621	180.6	-	-	-
1865-1866	99	19,188	.	-	1,140	-
1866-1867	98	18,992	.	-	2,533	-
1867-1868	101	18,474	.	-	4,571	-
1868-1869	107	19,864	.	-	9,322	-
1869-1870	117	20,690	176.8	-	12,199	-
1870-1871	117	21,155	.	465	16,140	-
1871-1872	122	22,854	.	538	17,256	-
1872-1873	124	23,368	.	613	20,352	-
1873-1874	132	24,138	.	653	.	-
1874-1875	137	26,534	193.7	776	25,539	32.9
1875-1876	141	27,973	.	883	31,158	.
1876-1877	144	29,414	.	910	29,579	.
1877-1878	147	29,415	.	871	27,152	.
1878-1879	146	29,191	.	732	29,393	.
1879-1880	151	30,239	200.2	632	26,646	42.2
1880-1881	160	31,592	.	584	23,426	.
1881-1882	169	33,729	.	545	21,215	.
1882-1883	177	35,909	.	409	26,424	.
1883-1884	188	37,033	.	490	23,745	.
1884-1885	200	36,960	184.8	488	23,410	47.9
1885-1886	205	40,130	.	525	31,491	.
1886-1887	209	41,263	.	584	33,438	.
1887-1888	213	41,959	.	667	35,405	.
1888-1889	211	45,804	.	756	43,164	.
1889-1890	245	88,803	75.1	937	.	.
1890-1891	1,313	100,031	.	.	.	.
1891-1892	1,631	115,848	.	.	.	.
1892-1893	1,909	135,807	.	.	.	.
1893-1894	1,758	136,324*	.	.	.	.
1894-1895	1,853	136,324*	73.0	.	.	.



TABLE XVIII (Continued)

Academic Year	Schools of Art		Average size	Art Night Classes		Average size
	Schools	Students		Classes	Students	
1895-1896	1,851	146,193	.	.	.	.
1896 -1897	1,849	146,720	.	.	.	.
1897 -1898	1,893	120,771	.	.	.	.
1898 -1899	1,745	130,126	.	.	.	.
1899 -1900	1,619	125,231	.	.	.	.
(1899 -1900)	(233)	(51,814)	(222.4)	(1,286)	(73,417)	(57.1)

Notes From 1889-1890, the students are shown as attending "Schools of Art", and from 1890-1891, the Schools and Classes are shown as "Schools of Art", without differentiation, until the final year 1899-1900.

\*For the years 1893-1894 and 1894-1895, the total number of students is so shown. This is probably a misprint.

TABLE XIX  
DRAWING IN ELEMENTARY SCHOOLS

Academic Year	Children in "Education Department" Schools	Children taught Drawing under Department	Children taught Drawing as percentage of whole
1854-1855	537,583	11,339	2.1
1859-1860	884,234	69,858	7.9
1864-1865	1,246,055	83,436	6.7
1869-1870	1,949,026	137,200	7.0
1874-1875	2,744,300	351,400	12.8
1879-1880	3,895,824	689,434	17.7
1884-1885	4,412,148	732,679	16.6
1889-1890	4,804,149	664,437	13.8
1894-1895	5,299,469	1,941,422	36.6

Notes For 1854-55, 1859-60, 1864-65 and 1869-70, Education Department figures include Scotland, and D.S.A. figures have been adjusted to exclude only Irish schools.

Until and including 1864-65, Education Department figures are those for "average attendance". From 1869-70, figures given are those "on the registers".

From 1874-75, Education Department figures are for England and Wales only, and D.S.A. figures have been adjusted to exclude both Scotland and Ireland.

Sources Education Department figures from the Annual Reports of the Committee of the Council on Education.

Department figures from Annual Reports.

TABLE XX  
MANUAL INSTRUCTION IN ELEMENTARY SCHOOLS  
1889-1899

Academic Year	Schools where M.I. taught	Scholars	Total Dept. grants £	Schools examined
1889-1890	102	.	.	.
1890-1891	63	2,568	600	.
1891-1892	442	8,905	2,352	169
1892-1893	640	17,875	4,589	353
1893-1894	1,021	30,059	8,041	575
1894-1895	910	67,470	16,307	.
1895-1896	1,069	83,220	19,350	.
1896-1897	1,271	106,423	25,781	.
1897-1898	914	.	17,283	.
1898-1899	174	.	.	.

TABLE XXI  
ART WORKS SUBMITTED TO SOUTH KENSINGTON

Academic Year	Students in Schools of Art	Students submitting works	Works submitted	Average works per students
1871-1872	22,854	11,184	73,542	6.6
1876-1877	29,414	18,131	138,199	7.6
1881-1882	33,729	21,291	221,748	9.9
1886-1887	41,263	26,879	322,040	11.9
1891-1892	115,848	22,239	108,123	5.3
1896-1897	146,720	24,665	97,611	3.9

Notes Figures from 1891-1892 for "students in schools" include students in Art Night Classes.



TABLE XXII  
THE ROYAL SCHOOL OF NAVAL ARCHITECTURE

Academic Year	Students			Graduates	
	Admiralty	Private	Total	Fellows	Associates
1864-1865	16	6	22	-	-
1865-1866	24	13	37	-	-
1866-1867	30	15	45	9	4
1867-1868	26	14	40	.	.
1868-1869	30	10	40	.	.
1869-1870	.	.	40	.	.
1870-1871	32	10	42	.	.
1871-1872	28	10	38	.	.
1872-1873	30	5	35	6	1

TABLE XXIII  
"TEACHERS IN TRAINING" AT  
THE R.S.M. & N.S.S.

Academic Year	Chemistry	Biology	Physics	Mechanics	Geology	Metallurgy	Agricultural Chemistry	Mining	Astronomy	TOTAL
1873-1874	15	10	10	10	-	-	-	-	-	45
1874-1875	16	10	12	12	-	-	-	-	-	50
1875-1876	16	9	12	12	-	-	-	-	-	49
1876-1877	16	11	12	11	-	-	-	-	-	50
1877-1878	15	12	12	11	10	-	-	-	-	60
1878-1879	15	11	12	11	10	-	-	-	-	59
1879-1880	.	.	.	.	.	-	-	-	-	.
1880-1881	14	7	8	8	9	4	-	-	-	50
1881-1882	11	8	10	10	8	4	8	7	-	66
1882-1883	12	.	.	.	.	.	.	.	-	.
1883-1884	12	9	14	18	9	4	7	4	-	77
1884-1885	19	11	13	8	7	4	8	4	-	74
1885-1886	19	22	15	14	10	10	6	5	14	105
1886-1887	24	13	17	13	12	-	8	-	-	87
1887-1888	13	18	16	10	9	-	7	-	-	73
1888-1889	13	17	13	12	17	-	3	-	-	75
1889-1890	14	17	11	12	13	-	4	-	-	71
1890-1891	16	19	13	13	19	-	5	-	-	85
1891-1892	.	.	.	.	.	-	.	-	-	.
1892-1893	16	13	21	21	17	2	6	1	-	97
1893-1894	23	11	14	14	19	-	1	1	-	83
1894-1895	22	15	23	13	15	-	2	1	-	91
1895-1896	23	16	19	19	18	-	1	1	-	96
1896-1897	25	15	19	10	13	-	1	1	-	84
1897-1898	19	15	17	12	15	-	2	2	-	82
1898-1899	26	11	21	8	9	2	-	3	-	80
1899-1900	32	5	24	10	8	2	-	2	-	83

TABLE XXIV  
TEACHERS ATTENDING PROVINCIAL COLLEGES AND UNIVERSITIES

Academic Year	Total	Academic Year	Total	Academic Year	Total
1877-1878	6	1885-1886	39	1893-1894	.
1878-1879	.	1886-1887	42	1894-1895	.
1879-1880	.	1887-1888	.	1895-1896	.
1880-1881	18	1888-1889	53	1896-1897	70
1881-1882	.	1889-1890	57	1897-1898	52
1882-1883	13	1890-1891	67	1898-1899	43
1883-1884	12	1891-1892	90	1899-1900	40
1884-1885	34	1892-1893	.		

TABLE XXV

SUMMER COURSES FOR SCIENCE TEACHERS AT SOUTH KENSINGTON

Year	Biology	Botany	Zoology	Animal Phys.	Physics	Mech.	App. Mech.	Sound	Light	Heat	Mag. & Elec.	Chemistry	Geology	Physiography	Steam	Agriculture	Hygiene	Mining	Metallurgy	M. C. and D.	Bldg. Constn.	Phys. Astron.	Naval Arch.	Total in Attee.	
1869	-	-	-	*	-	-	-	-	*	-	-	*	-	-	-	-	-	-	-	-	-	-	-	253	
1870	-	-	-	-	*	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	.	
1871	*	-	-	-	*	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	.	
1872	*	-	-	-	*	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	446	
1873	*	-	-	-	*	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	81	
1874	*	-	-	-	*	-	*	-	-	*	*	*	-	-	-	-	-	-	-	-	*	-	-	186	
1875	-	*	-	-	*	-	-	-	-	*	*	*	-	-	-	-	-	-	-	-	-	-	-	192	
1876	*	*	-	-	*	-	-	-	*	*	-	*	-	-	-	-	-	-	-	-	*	-	-	.	
1877	*	-	-	-	-	-	-	*	*	-	-	*	-	-	*	-	-	-	-	-	-	-	-	169	
1878	-	-	-	*	-	-	-	-	-	*	*	*	-	-	-	-	-	-	-	-	-	-	-	169	
1879	-	-	-	-	-	*	-	-	-	*	*	*	*	-	-	*	-	-	-	-	-	-	-	199	
1880	-	*	-	-	-	-	*	-	*	*	*	*	*	-	-	*	-	-	-	-	-	-	-	241	
1881	-	-	-	-	-	-	-	*	-	*	-	*	-	*	*	*	-	-	*	-	-	-	-	221	
1882	-	-	-	*	-	*	-	-	-	-	*	*	-	*	-	*	-	-	*	-	-	-	-	178	
1883	*	-	-	-	-	*	-	-	*	-	-	*	*	-	-	*	-	-	-	-	-	-	-	189	
1884	-	-	-	-	-	*	-	-	-	-	*	*	-	-	-	*	*	-	*	-	-	-	-	188	
1885	-	-	-	-	*	*	-	-	-	-	*	*	-	*	*	*	*	*	-	-	-	-	-	190	
1886	-	*	*	-	-	*	-	-	-	-	-	*	*	-	-	*	*	-	*	-	-	-	-	174	
1887	-	-	*	-	-	-	-	-	*	-	-	*	-	-	-	-	*	-	-	*	-	-	-	182	
1888	-	-	-	*	-	*	-	-	-	*	-	*	*	-	-	-	*	-	*	-	-	-	-	198	
1889	-	*	-	-	-	*	-	-	-	-	*	*	-	-	-	-	*	-	-	-	-	*	*	181	
1890	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	204
1891	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	245
1892	-	-	-	*	-	*	-	-	*	-	-	*	*	-	-	*	-	-	-	-	-	*	-	246	
1893	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	255

Key

\* Course held

. Numbers not given



TABLE XXV  
(Continued)

Totals in attendance at Science  
Teachers' Courses at South Kensington

Year	Total in Attendance
1894	243
1895	222
1896	189
1897	170
1898	152
1899	186

TABLE XXVI

GROWTH IN NUMBERS AND REMUNERATION  
OF SCIENCE TEACHERS COMPARED WITH  
AVERAGE SALARY OF "EDUCATION DEPARTMENT" TEACHERS

Academic Year	Average salary of schoolmasters	Candidates for Science Teachers' Certificates	Total of science teachers	Total paid to science teachers	Average payment to science teachers
1859-1860	£94- 1- 3	57	.	.	.
1860-1861	£94-10- 3	89	.	.	.
1861-1862	£94-18- 7	103	.	.	.
1862-1863	£93-17- 6	124	52	£ 3,240	£62- 7- 6
1863-1864	£90- 4- 6	109	70	£ 3,076	£43-18- 0
1864-1865	£86-10- 9	115	92	.	£38- 0- 0
1865-1866	£87- 3- 0	167	123	£ 5,002	£40- 13-0
1866-1867	£88-18- 5	233	194	£ 7,976	£41- 2- 6
1867-1868	£91- 5-11	-	258	£ 12,725	£44-13- 0
1868-1869	£93- 5- 7	-	486	£ 17,016	£35- 0- 6
1869-1870	£95-12- 9	-	746	£20,115	£26-19- 6
1874-1875	£109- 6-7	-	1,449	£42,474	£29- 6- 6
1879-1880	£121- 2-7	-	1,700	£40,229	£23-13- 0
1884-1885	£131-11-3	-	2,091	£63,364	£27- 0- 9

Notes Details of certificated schoolmasters' salaries from Annual Reports of the Committee of Council, which state "all professional sources of income".

The Department gives no details of payments to individual teachers, or details of average payments or numbers paid, after 1885-1886.

TABLE XXVII  
THE NATIONAL ART TRAINING SCHOOL/ROYAL COLLEGE OF ART  
1852-1899

Academic Year	Masters-in-training	Appointed to Schools	Certificates awarded		
			Gr. I	Gr. II-VI	Art Cl. Tchr.
1852-1853	.	.	.	.	.
1853-1854	.	.	.	.	-
1854-1855	79	20		55	-
1855-1856	106	21		37	-
1856-1857	62	22		21	-
1857-1858	79	.		.	-
1858-1859	64	12		.	-
1859-1860	68	16		40	-
1860-1861	.	11		59	-
1861-1862	53	3		51	-
1862-1863	47	6		28	-
1863-1864	54	7		24	-
1864-1865	31	16		.	-
1865-1866	24	2		7	-
1866-1867	28	14		9	-
1867-1868	31	2		17	-
1868-1869	34	.		.	-
1869-1870	40	6	12	1	-
1870-1871	42	2	11	4	-
1871-1872	45	6	12	7	-
1872-1873	40	3	15	7	-
1873-1874	44	7	10	12	-
1874-1875	44	.	9	11	-
1875-1876	36	3	13	20	-
1876-1877	41	5	8	12	-
1877-1878	40	6	15	15	-
1878-1879	38	.	14	16	-
1879-1880	40	4	20	15	-
1880-1881	37	5	16	17	-
1881-1882	39	.	3	20	-
1882-1883	34	.	.	.	-
1883-1884	36	.		31	-
1884-1885	34	.		15	-
1885-1886	34	.		15	-
1886-1887	37	.		19	22
1887-1888	39	.		15	31
1888-1889	38	.		28	31
1889-1890	39	8		21	42
1890-1891	39	.		35	18
1891-1892	38	5		36	26
1892-1893	39	.		34	.
1893-1894	37	.		38	.
1894-1895	39	.		26	.
1895-1896	38	.		26	19



TABLE XXVII  
(continued)

Academic Year	Masters-in-training	Appointed to Schools	Certificates awarded		
			Gr.I	Gr.II-VI	Art.Cl.Tchr.
1896-1897	41	.	53		22
1897-1898	39	.	32		8
1898-1899	39	8	23		9

TABLE XXVIII  
REGIONAL SOURCES OF STUDENTS  
NATIONAL ART TRAINING SCHOOL

Academic Year	New entrants	
	London	Provinces
1853-1854	29	12
1854-1855	8	26
1855-1856	24	8
1856-1857	.	.
1857-1858	.	.
1858-1859	6	9
1859-1860	1	12
1860-1861	.	.
1861-1862	2	8

TABLE XXIX  
ART PUPIL TEACHERS  
1859-1864

		Men	Women	Total
Length of service in years	One year	76	7	83
	Two years	50	8	58
	Three years	30	5	35
	Four years	19	1	20
	Five years	18	1	19
	Six years	6	2	8
Total pupil-teachers 1859-1864		199	24	223
Average length of service		2.4	2.4	2.4
Subsequently qualified		36	3	39
Percentage of those serving		18.1	12.5	17.4
Pupil-teachers who returned to original School		6	3	9

TABLE XXX  
FEMALE ART TEACHERS  
CERTIFICATED AT THE CENTRAL SCHOOL  
1857-1862

Academic Year	Total	Academic Year	Total
1856-1857	4	1859-1860	8
1857-1858	.	1860-1861	10
1858-1859	.	1861-1862	4

TABLE XXXI  
FEMALE ART TEACHERS CERTIFICATED  
1870-1882

Academic Year	Central School	Gower Street	Provinces	Total
1869-1870	7	4	3	14
1870-1871	1	-	7	8
1871-1872	4	2	1	7
1872-1873	6	4	1	11
1873-1874	8	3	3	14
1874-1875	5	5	6	16
1875-1876	9	4	5	18
1876-1877	6	1	-	7
1877-1878	13	15	11	39
1878-1879	9	9	16	34
1879-1880	11	4	6	21
1880-1881	13	1	7	21
1881-1882	2	1	3	6

Notes After 1881-1882, differentiation between men and women teachers is only rarely made in details on the award of certificates.

The table represents the awards of certificates made, not necessarily the total of individuals certificated.

TABLE XXXII  
EMPLOYMENT OF FEMALE ART TEACHERS  
1856-1871

Academic Year	Total employed in Local Schools	Academic Year	Total employed in Local Schools
1856-1857	1	1864-1865	5
1857-1858	2	1865-1866	5
1858-1859	1	1866-1867	4
1859-1860	4	1867-1868	5
1860-1861	5	1868-1869	4
1861-1862	8	1869-1870	5
1862-1863	6	1870-1871	6
1863-1864	6		

Note In returns from Schools of Art after 1870-1871, teachers are not shown by name.

TABLE XXXIII  
ART TEACHERS' QUALIFICATIONS

Academic Year	Total of certificated teachers	Teachers with Certificate I only		Teachers with Certificates II- VI	
		Total	Percentage	Total	Percentage
1877-1878	159	53	33.3	106	66.6
1881-1882	225	101	44.9	124	55.1
1898-1899	2,230	1,768	79.3	462	20.7



TABLE XXXIV  
 "PRIVATE" & "STATE" STUDENTS  
 AT THE CENTRAL SCHOOL OF ART

Academic Year	"Private" students	£ Total Fees	Masters in training	National Scholars
1856-1857	396	944	62	-
1861-1862	661	1,459	53	-
1866-1867	808	1,964	28	-
1871-1872	765	2,220	45	16
1876-1877	878	3,814	41	14
1881-1882	728	3,247	39	16
1886-1887	590	2,398	37	17
1891-1892	372	1,941	38	18
1896-1897	492	1,432	41	14

Note The total of "private" students is that for the two sessions into which the academic year was divided.

TABLE XXXV  
 CERTIFICATED ART TEACHERS  
 PRODUCTION BY CENTRAL AND BY LOCAL SCHOOLS

Academic Year	Grade I Certificates		Grades II-VI Certificates	
	Central School	Local Schools	Central School	Local Schools
1863-1864	24	7	.	.
1868-1869	12	14	1	1
1873-1874	10	14	12	1
1878-1879	14	16	58	-
1883-1884	31	.	.	.
1888-1889	28	29	.	.
1893-1894	34	.	.	.
1898-1899	3	135	20	10

TABLE XXXVI  
 SUMMER COURSES FOR TEACHERS OF ART

Year	Applications	Teachers in attendance
1887	"Numerous"	44
1888	153	53
1889	104	60
1890	116	63
1891	145	58
1892	165	108
1893	.	.
1894	245	96
1895	253	96
1896	231	96
1897	319	114
1898	305	120
1899	320	120

TABLE XXXVII  
CANDIDATES FOR SCIENCE  
TEACHERS' CERTIFICATES

Year	Total candidates	New candidates	Passed	Total certificated
1859	57	-	43	43
1860	89	.	75	.
1861	103	.	97	.
1862	125	77	112	237
1863	109	66	95	332
1864	115	57	96	380
1865	167	47	137	470
1866	233	153	198	601

TABLE XXXVIII  
TEACHERS RECEIVING OVER £100 ON  
PAYMENTS ON RESULTS IN SCIENCE

Academic Year	Numbers of teachers				Total teachers	% over £100	Highest payment
	Over £300	Over £200	Over £100	Total			
1868-1869	-	4	6	10	486	2.1	£237
1869-1870	-	-	28	28	746	3.8	£183
1870-1871	-	1	4	5	894	0.6	£274
1871-1872	1	4	33	38	979	4.0	£304
1872-1873	1	3	36	40	1,258	3.2	£333
1873-1874	5	11	45	61	1,422	4.3	£333
1874-1875	3	5	56	64	1,449	4.4	£331

TABLE XXXIX  
SCIENCE TEACHERS TEACHING IN  
MORE THAN ONE SCHOOL

Academic Year	Numbers of teachers in numbers of schools											Total	% of all Teachers	Average pay	Average of all teachers
	2	3	4	5	6	7	8	9	10	11					
1876-1877	104	48	20	10	2	1	-	-	1	-	186	14.2	£72	£29	
1877-1878	140	57	18	7	2	-	2	-	-	1	227	15.8	£53	£26	
1878-1879	143	52	22	3	3	2	3	-	-	-	228	14.6	-	£26	

Note For 1878-1879, there is insufficient material to make a calculation on average pay of such teachers.

TABLE XL  
"ARTISAN" OR "INDUSTRIAL" STUDENTS

Academic Year	Art students			Science students		
	Total students	"Artisan"	%	Total students	"Artisan"	%
1852-1853	-	-	48	-	-	-
1861-1862	-	-	-	-	-	48
1875-1876	27,973	13,789	49	-	-	-
1880-1881	31,592	17,361	56	-	-	-
1885-1886	40,130	24,664	61	-	-	-
1890-1891	-	-	-	148,408	144,985	97
1895-1896	146,193	142,546	98	196,185	192,265	98

Notes The Science figures for 1861-1862 show an additional 30% for "clerks and shopkeepers"



TABLE XLI  
"PRIVATE" STUDENTS IN SCIENCE

Academic Year	Total students	"Private" students	Percentage of "private" students
1865-1866	6,835	170	2.5
1875-1876	57,988	3,081	5.3
1880-1881	61,177	5,804	9.4
1885-1886	94,838	4,014	4.2
1890-1891	148,408	2,847	1.9
1895-1896	196,185	8,518	4.3

TABLE XLII  
INCREASE IN FEES PAID (SCIENCE)  
1871-1874

Academic Year	Schools where fees paid	Schools where no fees paid	Total schools	% where no fee paid	Total % where no fee paid
<u>1871-1872</u>					
England & Wales	427	43	460	9	15
Scotland	38	4	42	10	
Ireland	100	52	152	34	
<u>1872-1873</u>					
England & Wales	452	55	507	9	15
Scotland	74	5	79	6	
Ireland	136	60	196	30	
<u>1873-1874</u>					
England & Wales	582	42	624	7	7
Scotland	58	5	63	8	
Ireland	114	12	126	9	

TABLE XLIII  
SUBSEQUENT CAREERS OF STUDENTS

A) The School of Mines, Royal College of Chemistry and Normal School of Science				
*ABEL	Sir Frederick	1827-1902	Chemist	c.1845
ALLEN	Sir James	1855-1942	N.Z. statesman	1884-1887
*ARMSTRONG	H.F.	1848-1937	Chemistry Professor	1865-1867
BAUERMAN	H.M.	1835-1909	Woolwich Professor	1851-1852
BEARDMORE	Lord	1856-1936	Airship designer	
*BERKELEY	Lord	1865-1942	Physical chemist	1887
*BLANFORD	W.T.	1832-1905	Geologist	1852-1853
+*BOYS	Sir Charles	1855-1904	Professor	
BROUGH	B.H.	1860-1908	Chemist	1878-1881
*BUCKTON	G.B.	1818-1905	Entomologist	1848-1855
*CROOKES	Sir William	1832-1919	Physical chemist, PRS	1847-1854
DAWSON	George	1849-1901	Geologist	1870-1872
FOULDER	Alfred	1868-1940	Astrophysicist	
+FOSTER	Sir Clement le N.	1841-1904	Professor	1857
+FREAM	William	1854-1906	Agriculturalist	1880
HOBSON	E.W.	1856-1933	Mathematician	1871
KENNEDY	Sir Alexander	1847-1928	Professor	c.1863
LANCHESTER	G.W.	1868-1946	Car designer	



TABLE XLIII (Continued)

MILNE	John	1850-1913	Professor, Tokyo	
*MORGAN	Sir Gilbert	1872-1940	Chemist	1889
MORGAN	C.L.	1852-1935	Psychologist	1869
*MOTT	Sir Basil	1859-1938	Civil Engineer	1879
+O'SULLIVAN	C.	1841-1907	Chemist	1862
*PERKIN	Arthur G.	1861-1937	Professor	1878
*PERKIN	Sir William H.	1838-1907	Industrialist	1853-1866
*ROBERTS-AUSTEN	Sir William C.	1843-1902	Metallurgist	1861
*SNELUS	G. J.	1837-1906	Metallurgist	1864-1867
*SOLLAS	W. J.	1849-1936	Chemist	1867-1870
*THOMPSON	Silvanus P.	1851-1916	Physicist	
TUTTON	A. E. H.	1864-1938	Crystallographer	1883-1889
+WARD	H. M.	1854-1906	Professor of Botany	1875
B) The Royal School of Naval Architecture				
*ELGAR	F.	1845-1909	Naval Architect	1864-1867
WHITE	Sir William H.	1845-1913	Naval Architect	1864-1867
C) Schools of Science				
*BRIDGE	T.W.	1848-1909	Professor of Biology	B'ham & Midland Inst.
D) National Art Training School and Royal College of Art				
AUMONIER	James	1832-1911	Painter	
BROWN	Frederick	1851-1941	Slade Professor	1868-1875
BUTLER	Lady	1846-1933	Painter	1866
CLARKE	Sir C. Purdon	1846-1911	Director S.K.M.	1862-1865
*CLAUSEN	George	1852-1944	Painter	1873-1875
DILKE	Aemilia F.S.	1840-1904	Painter & critic	1859-1861
=BRURY	E.A.B.	1856-1944		
=FILDES	Sir Luke	1844-1927	Painter	
FINNIE	John	1829-1907	Liverpool master	1853-1855
GREGORY	E. J.	1850-1909	Painter	1869
GREENAWAY	Kate	1846-1901	Painter	? 1866
=HERKOMER	Sir Hubert von	1849-1914	Slade Professor	1866
HULME	F.E.	1841-1909	Professor	1858
=LUTYENS	Sir Edward L.	1869-1944	Architect, P.R.A.	1885-1887
McCALLUM	A.	1821-1902	Designer & painter	1854
MOIR	F.	1852-1904	Composer	
RAMSDEN	Omar	1873-1939	Goldsmith	Late 1890's
SAMBOURNE	E. Linley	1844-1910	Punch artist	1867
=SILANNON	Sir James	1862-1923	Painter	1878
=SIMS	C.	1873-1928	Painter	1890
E) Provincial Schools of Art				
				School
ANDERSON	William	1842-1900	Professor R.A.	Lambeth
=BENNETT	Arnold	1867-1931	Novelist	Potteries
BREWTHALL	E.P.	1846-1902	Art Master	Lambeth 1868
BROUGH	R.	1872-1905	Painter	Aberdeen, Edinburgh
=CAMERON	Sir David	1865-1945	Painter	Glasgow
DE SAULLES	George W.	1862-1903	Medallist	Birmingham
DUFFY	P.M.	1836-1909	Painter	Dublin
=EAST	Sir Alfred	1848-1913	Painter	Glasgow 1875
FINBERG	A.J.	1866-1939	Art Historian	Lambeth
FORBES	Stanhope A.	1857-1947	Painter	Lambeth
FRAMPTON	Sir George	1860-1928	Sculptor	Lambeth
GILL	Eric	1882-1940	Artist	Gloucester 1897-1899
=LAVERY	Sir John	1856-1941	Painter	Glasgow
MACKINTOSH	Chas. Rennie	1868-1928	Architect	Glasgow 1885-1892
MELVILLE	A.	1855-1904	Painter	Edinburgh 1875
MULLINS	E.R.	1848-1907	Sculptor	Lambeth 1867
=ORPEN	Sir William	1878-1931	Painter	Dublin 1889
=PHILPOT	Glyn W.	1884-1937	Painter	Lambeth 1891
RACKHAM	Arthur	1867-1939	Illustrator	Lambeth 1880's
RUSSELL	G. W. ("AE")	1867-1935	Author	Dublin 1880
RUSSELL	Sir Walter	1867-1949	Painter	Westminster
*SHANNON	C.H.	1863-1937	Painter	Lambeth
=SWAN	J.H.	1847-1910	Artist	Lambeth, Worcester



TABLE XLIII (Continued)

SYMONS	W.C.	1845-1911	Painter	Lambeth
THORNTON	A.H.R.	1863-1939	Painter	Westminster
TINWORTH	George	1843-1913	Modeller	Lambeth 1861
TONKS	Henry	1862-1937	Slade Professor	Westminster
TWEED	John	1869-1933	Sculptor	Glasgow, Lambeth
WAIN	Louis	1860-1939	Illustrator	West London 1877-1880
WALLER	S.E.	1850-1903	Painter	Gloucester
WILKINSON	Norman	1882-1934	Stage designer	Birmingham
YEATS	William Butler	1865-1939	Poet	Dublin 1881

\* Fellow of the Royal Society

= Member of the Royal Academy

\* Subsequently member of staff of the Central School

TABLE XLIV

SUBSEQUENT CAREERS OF  
SALARIED MASTERS IN 1852

	First Appointment	School in 1852	Salary in 1852	Last Record	Subsequent Schools
BURBURY	1850	Coventry	-	1852-1853	-
BROWN J.	1848	Spitalfields	£100	1853-1854	
CARRIER	1850	Hanley	£100	1854-1855	
CLARK	1852	Coventry	£ 50	1852-1853	
CLARK T.	1852	Nottingham	£200	1853-1854	
CROTCHETT J.	1851	York	£150	1853-1854	
EBSWORTH J.W.	1851	Glasgow	£100	1853-1854	
EVANS J.	1852	Manchester	£100	1864-1865	
FUSSELL J.	1848	Nottingham	£100	1862-1863	
FUSSELL F.R.	1852	Coventry	£150	1864-1865	Nottingham
GAUNT T.	1849	Leeds	£200	1853-1854	
HAMMERSLEY J.D.	1848	Manchester	£300	1864-1865	Bristol
HARRISON	1849	Newcastle-on-Tyne	£ 25	1852-1853	
HEAVISIDE	1851	Norwich	£150	1853-1854	
HOLDING G.	1850	Manchester	£100	1853-1854	
KIRK W.	1849	Birmingham	£150	1853-1854	
KNIGHT	1849	Cork	£150	1852-1853	
KYD J.	1851	Worcester	£150	1862-1863	
LOMAS H.D.	1848	Sheffield	£100	1862-1863	
McCALLUM A.	1852	Stourbridge	£150	1852-1853	
McMANUS H.	1849	Dublin	£300	1862-1863	
MITCHELL Young	1846	Sheffield	£300	1862-1863	
MURDOCH J.S.	1849	Glasgow	£200	1853-1854	
NURSEY C.L.	1849	Belfast	£300	1859-1860	Norwich
PEPPERCORN J.P.	1849	Sheffield	£150	1856-1857	
RAIMBACH D.W.	1852	Limerick	£150	1876-1877	Cork, B'ham
RICE Silas	1849	Hanley	£200	1863-1864	
SCANLON B.R.	1851	Cork	£300	1853-1854	
SCOTT W.B.	1844	Newcastle-on-Tyne	£150	1862-1863	
STEWART G.	1851	Macclesfield	£200	1864-1865	
STEWART W.	1848	Paisley	£250	1877-1878	
WALLIS G.	1851	Birmingham	£300	1856-1857	
WALLIS W.	1851	Birmingham	£100	1873-1874	
WALSH	1845	Spitalfields	£175	1856-1857	
WOOD Daniel	1852	Belfast	£150	1876-1877	B'ham,
WILSON C. Heath	1849	Glasgow	£300	1862-1863	Cambridge

MISSING

PRINT



TABLE XLV

Masters in the Schools of Design as Artists

Master	(1852) School	Speciality	Exhibited	Source
Burbury	Coventry	-	-	-
Brown	Spitalfields	-	-	-
Clark	Coventry	-	-	-
Clark T.	Nottingham	Landscape	R.A., B.I., Prov.	≠*
Carrier W.	Hanley	Sculpture	R.A.	+*
Cotthett J.	York	Flowers	R.A.	*
Ebsworth J. . .	Glasgow	-	-	-
Gannt T.	Leeds	-	R.A., Prov.	*
Evans J.	Manchester	Landscape	R.A., Prov.	*
Fussell F.	Nottingham	-	-	-
Fussell F. R.	Coventry	-	R.A.	≠
Hammersley J.D.	Manchester	Landscape	R.A., Prov.	*≠
Holding G.	Manchester	-	-	-
Harrison	Newcastle-a-T.	-	-	-
Heaviside J.	Norwich	Figures	Prov.	*
Kyd J.	Worcester	"Domestic"	R.A., Prov.	*
Kirk W.	Birmingham	-	-	-
Knight	Cork	-	-	-
Lomas H.D.	Sheffield	-	-	-
Mansueti H.	Dublin	Historical	R.A., R.H.A., Prov.	*≠
Murdoch J.S.	Glasgow	-	-	-
Mitchell Young	Sheffield	-	-	-
McCallum A.	Stourbridge	-	R.A.	*≠
Nurse C.L.	Belfast	Seascapes	B.I., Prov.	*≠
Peppercorn J.P.	Sheffield	-	-	-
Rice Silas	Hanley	-	-	-
Rainbach D.M.	Limerick	Portraits	R.A., Prov.	*≠
Scanlon W.M.	Cork	"Domestic"	R.A., Prov.	*
Stewart George	Barnsley	-	R.A., Prov.	*
Stewart William	Paisley	-	-	-
Scott W.B.	Newcastle-u-T.	"Domestic"	R.A., Prov.	*≠
Woods Daniel	Belfast	Landscape	B.I., Prov.	*≠
Wallis G.	Birmingham	-	R.A., Prov.	*≠
Wallis W.	Birmingham	-	R.A., Prov.	*
Wilson C.H.	Glasgow	-	R.A., Prov.	*
Walsh	Spitalfields	-	R.A., Prov.	*

Note  
 R.A. Exhibited at the Royal Academy  
 B.I. Exhibited at the British Institution  
 Prov. Exhibited at Provincial Exhibitions

Sources

- \* Graves A Dictionary of Artists (London Henry Graves 1895)  
 ≠ W.M. Grant Dictionary of British Landscape Painters (Leigh on Sea Lewis 1952)  
 + Carrier Dictionary of British Sculptors (London Lockhart 1953)

TABLE XLVI  
SCHOLARSHIPS & EXHIBITIONS

Year	Elementary School Scholarships	Science & Art Scholarships	Local Exhibitions
1867-1868	29	47	-
1868-1869	65	62	3
1869-1870	55	55	5
1870-1871	43	36	12
1871-1872	24	30	15
1872-1873	22	31	6
1873-1874	35	44	5
1874-1875	55	59	6
1875-1876	54	57	9
1876-1877	53	56	12
1877-1878	44	55	12
1878-1879	52	62	11
1879-1880	66	65	7
1880-1881	65	73	13
1881-1882	81	95	14
1882-1883	104	103	15
1883-1884	124	96	14
1884-1885	116	112	16
1885-1886	172	140	24
1886-1887	-	195	21
1887-1888	-	220	25
1888-1889	-	396	20
1889-1890	-	396	19
1890-1891	-	387	19
1891-1892	-	.	.
1892-1893	-	373	14
1893-1894	-	363	16
1894-1895	-	381	.
1895-1896	-	328	14
1896-1897	-	.	.
1897-1898	-	318	.
1898-1899	-	487	11

Notes From 1886-1887 Elementary scholarships were abolished, and the Science & Art Scholarships were offered in different form  
Where no details are given for a year, this is shown as "."

Sources Annual Reports

TABLE XLVII  
REGIONAL SOURCES OF WHITWORTH SCHOLARS  
1871-1892

	Total	Percent.
North of England ...	129	33
Midlands... ..	85	22
London and the South-East	75	19
The South-West ..	29	7
Scotland, Wales and Ireland	73	19



TABLE XLVIII

WHITWORTH SCHOLARSHIPS  
1869-1900

Year	Candidates	Passed in Theory	Examined in Practical	Awards	
				Scholarships	Exhibitions
1869	106	52	46	12	-
1870	146	54	31	10	-
1871	66	39	.	10	-
1872	53	46	.	10	-
1873	72	51	39	10	-
1874	64	35	25	6	-
1875	48	33	26	7	-
1876	51	.	19	6	-
1877	68	.	.	7	-
1878	78	17	.	6	-
1879	75	19	.	8	-
1880	45	17	.	9	-
1881	57	37	.	17	-
1882	.	.	.	25	-
1883	45	36	.	25	-
1884	57	38	.	25	-
1885	55	36	.	25	-
1886	90	.	.	25	-
1887	94	53	.	25	-
1888	124	86	.	4	30
1889	124	88	.	4	30
1890	108	77	.	4	30
1891	113	69	.	4	30
1892	93	.	.	4	30
1893	88	58	.	4	30
1894	107	80	.	4	30
1895	117	.	.	4	30
1896	.	.	.	4	30
1897	73	.	.	4	30
1898	90	.	.	4	30
1899	89	.	.	4	30
1900	82	.	.	4	30

TABLE XLIX  
OCCUPATIONS OF WHITWORTH SCHOLARS  
(ON AWARD)  
1871-1892

Occupation	Total	Occupation	Total
Chemist	8	Millwright	1
Fitter/Turner	63	Electrical Engineer	3
Patternmaker	11	Civil Engineer	1
"Student"	44	Brass Fitter	1
Draughtsman	51	Metallurgist	1
"Engineer"	186	Carpenter/Joiner	3
Marine Engineer	12	Chairmaker	1
Teacher	5	Total	11
Total	380	Grand Total	391

TABLE L  
WHITWORTH SCHOLARS AS TEACHERS  
(TO 1885)

Full-time		Part-time	
Tedhcnical School/Organised Science School	8	Evening classes	6
"Private"	1		
City and Guilds	4		
University or equivalent	15		
Overseas	3	Total (of 143 awards 1869-1885)	38
Evening classes	1		

TABLE LI  
RELATIVE SIZES OF SCIENCE AND ART SCHOOLS

Academic Year	Average size of School of Art	Average size of Art Night Class	Average size of School of Science
1865-1866	194.0	.	44.7
1870-1871	180.8	34.7	41.9
1875-1876	198.3	35.2	40.7
1880-1881	197.5	40.1	44.9
1885-1886	195.2	60.0	51.3
1890-1891	76.2		68.6
1895-1896	85.0		72.1
1899-1900	222.4	57.1	84.2

TABLE LII  
INFLUENCE OF SCIENCE AND ART CLASSES

Academic Year	Total population of Great Britain and Ireland in age group 15-19	Total of Science and Art students	Percentage of age-group affected
1870-1871	1,783,600	75,310	4.21
1880-1881	2,035,000	115,795	5.70
1890-1891	2,226,100	248,439	11.16
1900-1901	2,080,300+	267,772*	12.90

+ Figures for England, Wales and Ireland only  
\* Department figures for 1899-1900



TABLE LIII  
 ROYAL ENGINEER OFFICERS  
 SERVING AS INSPECTORS  
1867-1881

Academic Year	Total	Academic Year	Total
1867-1868	21	1874-1875	60
1868-1869	12	1875-1876	69
1869-1870	33	1876-1877	68
1870-1871	38	1877-1878	54
1871-1872	49	1878-1879	58
1872-1873	61	1879-1880	60
1873-1874	55	1880-1881	61

TABLE LIV  
 ROYAL ENGINEER OFFICERS  
 SERVING AS INSPECTORS  
YEARS OF SERVICE BY 1881

Years of service as Inspector	Number of officers
1	92
2	48
3	30
4	23
5	21
6	11
7	8
8	8
9	3
10	-
11	1

TABLE LV  
 ROYAL ENGINEER OFFICERS  
 SERVING AS INSPECTORS  
YEARS OF SERVICE IN THE SAME AREA

Years of service	Number of officers
2	51
3	28
4	17
5	8
6	6
<b>9</b>	1

TABLE LVI  
RELATIVE EXPENDITURE OF THE DEPARTMENT  
AND OF THE EDUCATION DEPARTMENT

Education Department		Science & Art Department		Total both Departments £	Department percentage of total
Financial year ending	Total expenditure £	Financial year ending	Total expenditure £		
31 December 1855	369,602	31 March 1855	56,910	426,512	13.3
31 December 1860	724,403	31 March 1860	92,592	816,995	11.3
31 December 1865	636,810	31 March 1865	100,362	737,172	13.6
31 March 1870	840,335	31 March 1870	220,344	1,070,679	20.6
31 March 1875	1,356,746	31 March 1875	271,686	1,628,432	16.7
31 December 1880	2,497,216	31 March 1880	339,125	2,836,341	11.9
31 December 1885	3,241,603	31 March 1885	392,611	3,634,214	10.8
31 December 1890	3,678,450	31 March 1890	506,462	4,184,912	12.1
31 December 1895	4,081,281	31 March 1895	721,522	4,802,803	15.0
31 December 1900	8,723,538	31 March 1900	612,586	9,236,124	6.6

TABLE LVII  
SCIENCE AND ART SCHOOLS 1889-1898

Academic Year	Science Schools	Art Schools	Science & Art Schools	Total Schools	Percentage of total		
					Science	Art	Sc.& Art
1889-1890	1,145	81	830	2,064	55.5	3.9	40.6
1890-1891	1,358	97	1,069	2,524	53.8	3.8	42.4
1891-1892	1,197	158	1,353	2,708	44.2	5.8	50.0
1892-1893	1,081	211	1,579	2,871	37.4	7.6	55.0
1893-1894	1,130	182	1,528	2,840	39.8	6.4	53.8
1894-1895	1,051	133	1,522	2,705	38.8	4.9	56.3
1895-1896	892	285	1,422	2,599	34.3	10.9	54.8
1896-1897	962	294	1,464	2,720	35.5	10.5	54.0
1897-1898	704	325	1,134	2,163	32.5	15.0	52.5

TABLE LVIII  
SCHOOLS WITH OVER 500 STUDENTS  
1889-1898

Academic Year	Science only	Art only	Science and Art	Total
1889-1890	3	-	16	19
1890-1891	3	-	30	33
1891-1892	4	-	43	47
1892-1893	4	-	43	47
1893-1894	1	-	46	47
1894-1895	3	-	47	50
1895-1896	-	1	46	47
1896-1897	5	-	96	101
1897-1898	5	-	26	31



TABLE LIX  
SCHOOLS OF SCIENCE AND ART  
WITH BELOW 100 PUPILS  
1889-1898

Academic Year	Total of all Schools	Schools with below 100 pupils	Percentage of Schools with below 100 pupils
1889-1890	2,064	1,681	81.4
1890-1891	2,524	2,106	83.4
1891-1892	2,708	2,171	80.1
1892-1893	2,871	2,261	78.7
1893-1894	2,840	2,248	79.1
1894-1895	2,705	2,108	77.9
1895-1896	2,599	2,029	78.1
1896-1897	2,720	1,972	72.5
1897-1898	2,163	1,700	78.6

TABLE LX  
THE POLITICAL HEADS  
OF THE DEPARTMENT

Date of assumption of office	Administration	Presidents of the Board of Trade	
(6 July 1846)	Lord John Russell	Henry Labouchere, later Earl of Taunton	
27 February 1852	Derby	J. W. Henley	
28 November 1852	Aberdeen	Edward Cardwell	
10 February 1855	Palmerston	Lord Stanley of Alderney	
		Committee of the Council on Education	
		Lord President	Vice-President
		Earl Granville	W. F. Cowper
25 February 1858	Derby	Salisbury	C. B. Adderley
18 June 1859	Palmerston	Earl Granville	Robert Lowe
6 November 1865	Lord John Russell	Earl Granville	H. A. Bruce
6 July 1866	Derby	Buckingham	H. T. L. Corry
27 February 1868	Disraeli	Marlborough	Lord Robert Montagu
9 December 1868	Gladstone	Ripon Aberdare	W. E. Forster
21 February 1874	Disraeli (Beaconsfield)	Richmond	Viscount Sandon Lord George Hamilton
27 April 1880	Gladstone	Spencer Carlingford	A. J. Mundella
24 June 1885	Salisbury	Cranbrooke	E. Stanhope Sir Henry Holland
6 February 1886	Gladstone	Spencer	Lyon Playfair
3 August 1886	Salisbury	Cranbrooke	Sir Henry Holland W. Hart Dyke
18 August 1892	Gladstone	Kimberley	A. H. D. Acland
3 March 1894	Rosebery	Rosebery	A. H. D. Acland
2 July 1895	Salisbury	Devonshire	Sir John Gorst

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C) Minutes and Official Recordsa) DepartmentMinutes of the Department of Science and  
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<sup>1</sup> Except where otherwise stated, these Select Committees were Commons Committees.



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The Middlesbrough Public Library  
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The National Portrait Gallery  
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