The provision of technical education in Sunderland prior to 1908

Hall, W. G.

CONTENTS

Volume II.

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Appendix A

Statistics Relating to Sunderland's Economic Growth During the Nineteenth Century.

Table I.

Population of Sunderland, 1801 to 1901.

1801	24.469
1811	25.205
1821	30.923
1831	39.470
1841	61.465
1851	64.720
1861	81.745
1871	98.271
1881	116.548
1891	131.015
1901	146.077

(Sunderland Red Book, 1929, p.27)

Table II.

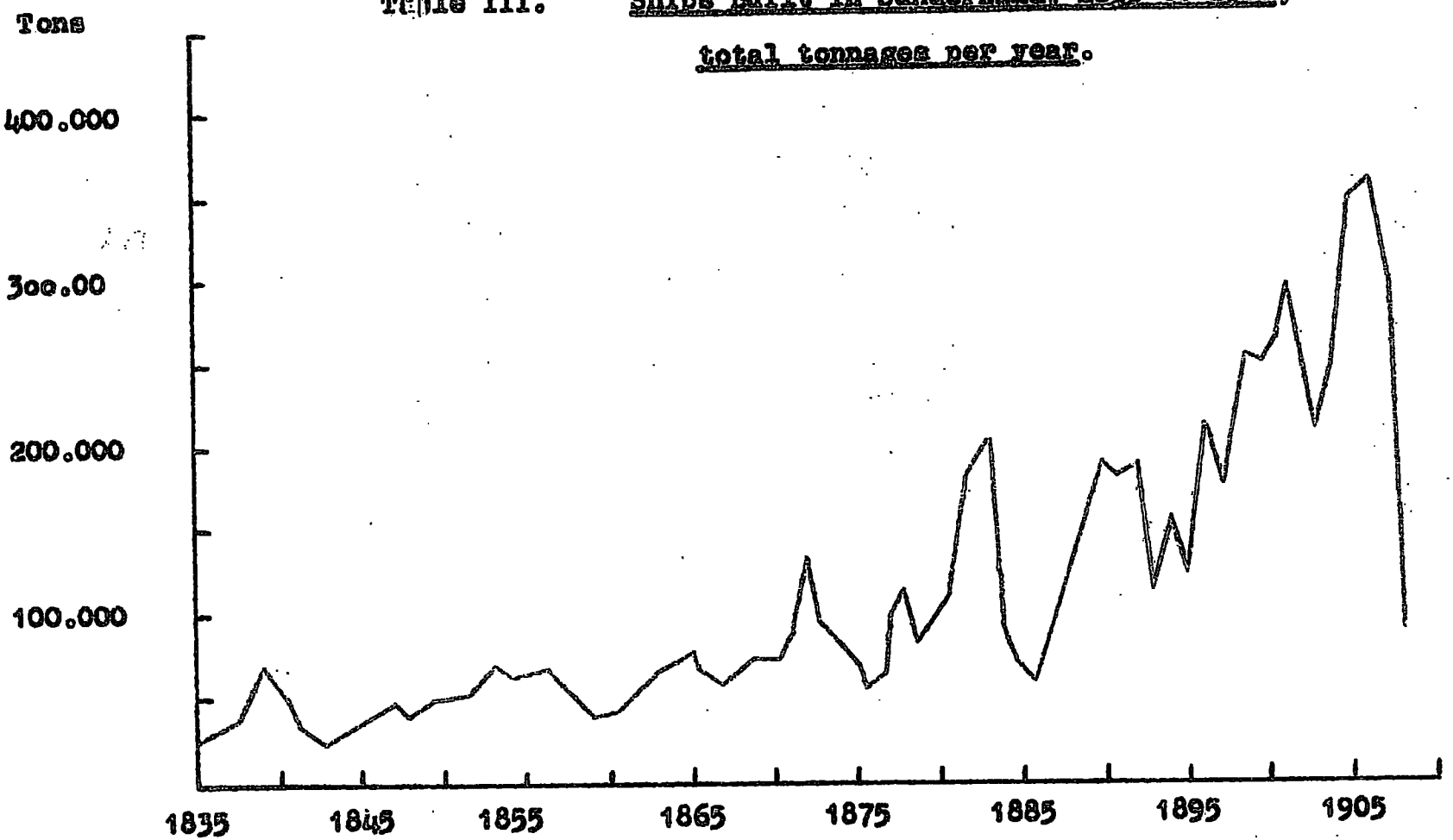
Numbers of Shipyards on the River Wear,

1798 to 1905.

1798	9
1815	15
1833	34
1835	29
1840	65
1855	75
1860	58
1900	13
1905	9

(Potts, T. "Sunderland: a History" (1892), p. 131)
(Smith, J.W., & Holden, T.S. "Where Ships Are Born", (1947), p. 7)

Table III. Ships Built in Sunderland, 1835 to 1908, total tonnages per year.



(Smith & Holden, op.cit., pp. 94-96).

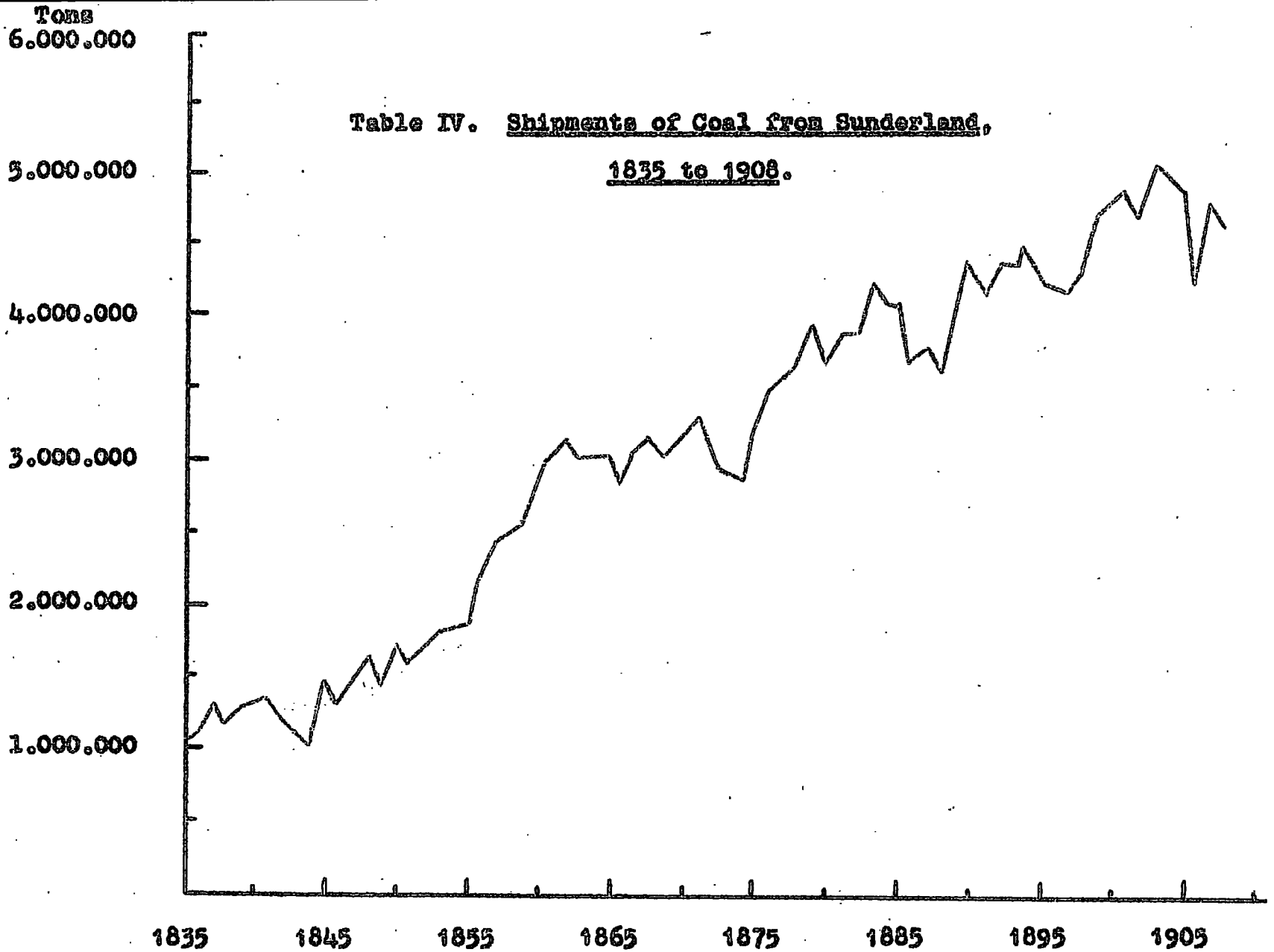
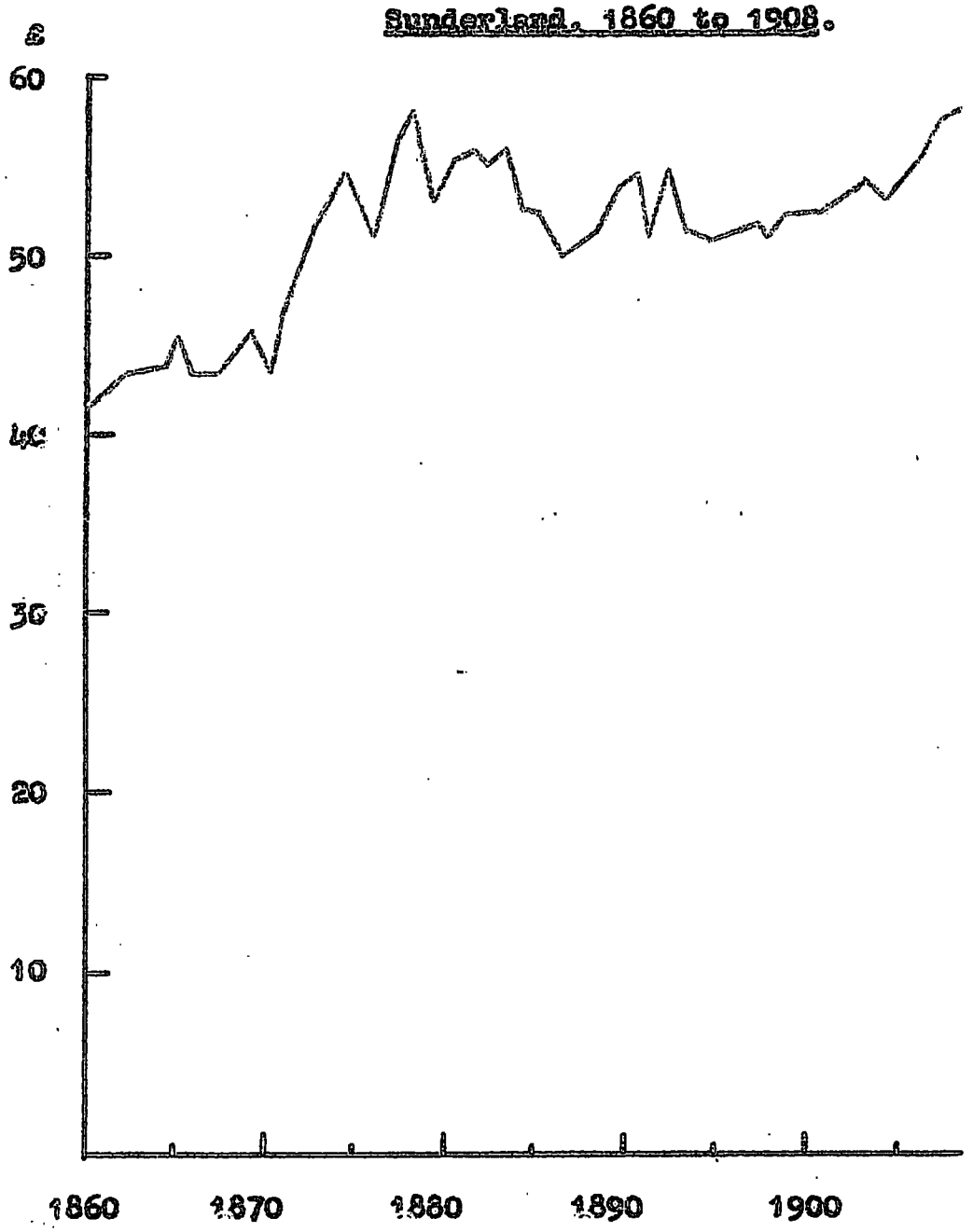


Table IV. Shipments of Coal from Sunderland, 1835 to 1908.

(River Wear Commissioners Trade Returns).

Table V. Value of Trade per 1000 Register tons of ships clearing from the Port of Sunderland, 1860 to 1908.



(The River Wear Commissioners Returns of Trade.)

Table VI. Exports (other than coal) from the Port of Sunderland, 1880 to 1907.

Year	Bottles and Glass (tons)	Earthen-ware (crates)	Lime (tons)	Iron and Steel (tons)	Chemicals (tons)	Patent Fuel (tons)	Cement (tons)	Pitch (tons)	Creosote Oil (tons)
1880	9.843	640	33.426	15.886	2.872	33.436	3.746		
1881	8.996	684	30.554	20.581	5.644	61.432	4.714		
1882	7.343	682	30.662	19.205	144	72.695	4.983		
1883	3.096	424	32.430	20.034	209	67.508	4.476		
1884	6.011	556	32.565	12.627	6.631	40.276	7.238		
1885	8.045	382	29.056	11.499	477	49.174	8.548		
1886	6.338	406	29.623	9.548	1.569	44.379	6.233		
1887	8.926	366	22.613	9.145	734	52.048	9.085		
1888	8.560	347	21.166	10.494	288	57.596	10.075		
1889	7.833	146	17.351	11.753	1.504	39.618	7.838		
1890	7.822	214	15.592	20.758	1.235	33.641	7.202		
1891	6.459	222	14.066	18.258	20	35.555	7.270		
1892	4.517	232	11.561	5.797		36.055	6.198		
1893	5.279	204	12.461	6.269		53.179	4.645		
1894	5.077	215	13.143	7.016		52.238	6.620		
1895	4.772	105	11.947	5.326		30.036	5.614		
1896	5.679	117	13.874	13.496		18.444	6.853		
1897	6.558	111	11.988	14.822		25.121	4.647		
1898	6.185	9	13.521	12.357	892	38.411	3.618		
1899	5.920	10	12.842	13.558	42	30.899	3.651	9.594	
1900	5.327	26	7.839	13.820		12.348	3.486	14.764	
1901	4.663		6.496	11.722			2.304	12.572	
1902	4.176		7.938	10.834	1.464		1.308	15.727	
1903	2.791		2.478	8.191	181		1.029	14.569	
1904	3.175		6.085	11.032	695		1.331	16.284	
1905	3.178		4.458	8.156	204		910	13.105	
1906	4.031		3.743	8.193	118		429	18.231	3.255
1907	4.394		4.341	7.146	24		376	15.882	10.165

(The River Wear Commissioners Returns of Trade)

Table VII. Imports into the Port of Sunderland, 1880 to 1907.

Year	Timber (loads)	Pit Props (doz.)	Iron and Steel (tons)	Ores (tons)	Chalk, Loam etc. (tons)	Grain (qrs.)	Flour (tons)	Esparto Grass (tons)	Hay (tons)	Straw (tons)	Tar (casks)	Petroleum in bulk (tons)
1880	103.535	385.339	16.296	76.923	84.032	134.436	634		184			
1881	103.487	285.012	16.326	78.817	88.912	141.901	1.891	1.610	492			
1882	120.977	352.452	20.507	68.456	79.666	139.084	2.953	854	570	1.013	4.751	
1883	107.001	406.327	19.775	84.298	54.801	173.672	2.681		223	1.035	5.181	
1884	81.310	325.438	9.886	43.922	58.198	130.606	2.799	471	405	962	2.848	
1885	76.911	383.060	10.267	79.198	48.309	164.941	2.784		295	421	3.307	
1886	51.643	413.570	3.890	64.232	43.155	151.284	1.230	4.973	865	516	1.040	
1887	53.446	446.940	7.089	68.834	39.746	144.829	1.611	4.709	884	536	1.094	
1888	75.722	434.190	9.610	95.901	49.737	159.919	1.778	13.741	699	976	1.448	
1889	86.445	688.820	13.508	100.089	51.857	132.520	1.054	13.218	446	336	3.259	
1890	81.256	613.620	10.158	48.156	51.137	222.190	1.144	20.379	47	117		
1891	75.468	489.000	8.794	70.853	47.430	202.141	366	16.522	211		1.212	1.980
1892	79.335	520.760	7.905	74.368	43.309	165.827	177	20.273	774	54	1.414	3.647
1893	64.921	557.770	7.179	95.325	43.149	167.596	186	15.864	626	13	1.169	5.979
1894	69.689	607.070	7.577	104.142	43.324	178.527	76	16.506	594	20		4.403
1895	73.305	467.180	6.279	42.525	43.454	229.433	40	14.260	135	10	1.499	6.572
1896	76.797	529.600	8.427	96.642	46.908	175.776	118	17.387	212		1.399	7.851
1897	89.326	640.950	8.807	83.847	48.191	139.446	84	16.737	219	425		9.600
1898	79.904	599.440	9.754	69.012	47.065	113.383	392	15.930	139	259	1.650	11.324
1899	91.830	587.670	8.801	87.006	46.088	122.542	181	17.680	163		1.808	11.198
1900	94.639	706.320	10.698	51.708	54.510	164.230	256	17.660	86			10.559
1901	76.387	587.920	7.589	53.201	43.173	116.537	217	17.433	111	150		13.008
1902	65.058	503.400	8.712	69.694	36.679	96.601	243	22.488	180	388	1.386	11.620
1903	80.113	515.610	8.407	95.557	38.090	133.560	429	19.586	466		500	6.191
1904	65.197	509.950	15.841	65.934	43.644	172.370	328	23.918	195		988	9.115
1905	67.247	436.900	14.901	74.279	42.624	173.158	20	21.492	144	131	662	15.324
1906	79.580	432.730	16.754	74.041	61.257	141.328	65	16.238	271	138	1.505	10.690
1907	74.344	304.390	8.076	66.477	48.723	120.146	30	21.078		30	487	22.644

(The River Wear Commissioners Returns of Trade)

Appendix B.

Statistics Relating to Other Science and Art Evening Classes (apart from No. 1141) Established in Sunderland 1873 to 1908.

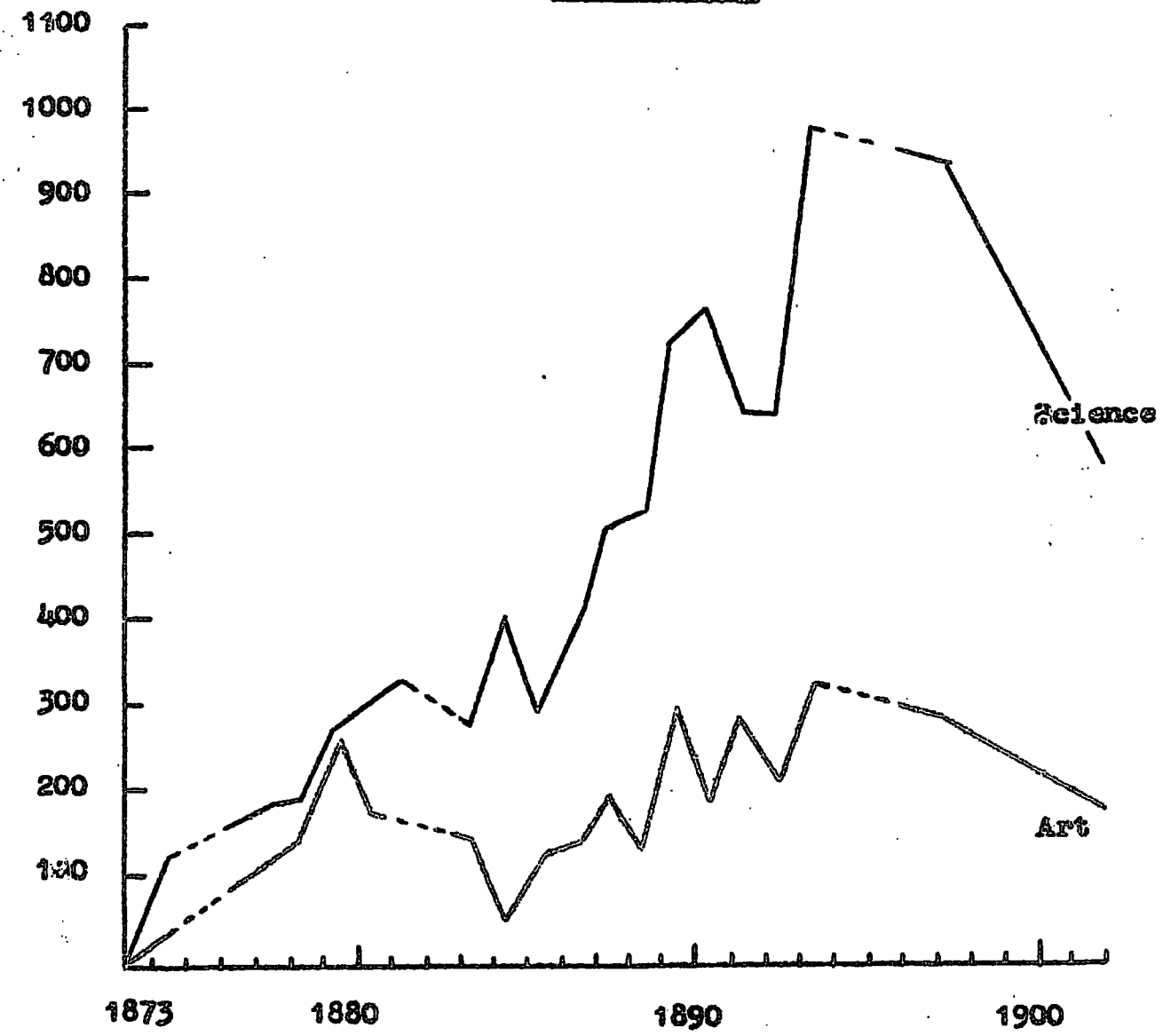
Table I.

A List of Classes.

Name and Location of Class	Departmental Number
Bishopwearmouth National School, Rectory Park.	1136
Monkwearmouth Workmen's Hall, Dundas Street.	1139
Milton Hall School, Vine Place.	1140
Y.M.C.A., Foyle Street.	1143
Hendon Church Institute, Burlington Road.	1144
The Schoolroom, New Herrington.	1162
Methodist New Connexion Schools, Zion Street.	1165
Co-operative Society, Green Street.	1168
Diamond Hall Board School.	1169
Cumberland Street Schoolroom.	1173
Hendon Board School.	1182
Thomas Street Board School.	1188
Wesleyan School, Robinson Street.	1142
The Grange School, Borough Road.	1196
Blackett's Buildings, High St. West.	11.135 (1166 fr. 1887)
Y.M.C.A., Murton Street.	1143A
Higher Grade Boys' School.	1117
Valley Road Board School.	1176 (1117B fr. 1897)
Hudson Road Board School.	1117A
St. Thomas's Church Institute, Suffolk Street.	1144A
St. Thomas's Lecture Hall, John Street.	1144B
Primitive Methodist Institute, Chester Road.	1168A

(Department of Science & Art Reports).

Table II. Other Science and Art Evening Classes in Sunderland - student numbers from 1873 to 1902.



(Department of Science and Art Reports.)

Table III. Other Science and Art Classes - Science Student Numbers per Class, 1873 to 1902

School No.	1873	1874	1877	1878	1879	1880	1881	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1897
1136	20	39	38	30	40	45	45	32	70	42	32	114	116	172	124	58	26	49	8
1139	-	37	67	60	44	12	50	24	32	25	30	20	17	-	-	-	-	-	-
1140	-	47	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1143	-	-	20	15	20	20	15	-	-	-	-	92	111	269	200	197	180	160	200
1144	-	-	21	10	56	60	60	46	50	50	60	74	46	-	76	80	80	110	90
1162	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1165	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1168	-	-	-	15	15	16	60	50	90	90	86	49	67	49	62	60	35	48	25
1169	-	-	-	10	10	12	15	15	15	15	20	18	26	4	13	7	-	-	-
1173	-	-	-	3	38	55	-	-	-	-	-	-	-	-	-	-	-	-	-
1182	-	-	-	-	34	55	27	9	30	40	40	64	89	64	67	18	40	12	-
1188	-	-	-	-	-	20	25	15	20	10	15	4	15	2	4	-	-	-	-
1142	-	-	-	-	-	-	30	40	-	-	-	-	-	-	-	-	-	-	-
1196	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-
1166	-	-	-	-	-	-	-	60	100	70	80	69	125	120	94	-	-	-	-
1143A	-	-	-	-	-	-	-	-	-	-	-	-	9	42	129	46	-	-	-
1117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	261	577	193
1117B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	30	29	35
1117A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	315
1144A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
1144B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
1168A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25

(Department of Science and Art Reports)

Table IV. Other Science and Art Classes - Art Student Numbers per Class, 1873 to 1902

School No.	1873	1874	1877	1878	1879	1880	1881	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1897
1136	-	28	48	78	102	65	54	30	30	4	15	36	27	75	56	37	15	31	8
1139	-	-	73	44	53	36	-	-	12	-	-	-	-	-	-	-	-	-	-
1140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1143	-	-	-	-	-	-	-	-	-	-	-	20	29	72	132	72	60	45	12
1144	-	-	-	12	21	22	35	20	-	-	-	-	-	-	-	-	-	-	-
1162	-	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1168	-	-	-	-	-	-	-	30	3	30	25	20	15	39	-	19	-	-	-
1169	-	-	-	-	21	25	25	20	3	30	35	46	19	28	10	6	-	-	-
1173	-	-	-	-	25	17	-	-	-	-	-	-	-	-	-	-	-	-	-
1182	-	-	-	-	25	30	30	20	2	20	25	33	41	11	-	-	-	-	-
1188	-	-	-	-	-	-	36	30	2	50	30	38	15	11	-	-	-	-	-
1142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1196	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1143A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	150	248	66
1117B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
1117A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175
1144A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1144B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1168A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(Department of Science and Art Reports)

Appendix C.

Statistics Relating to Sunderland School of Science and Art. (No. 1141).

Table I. Student Numbers, 1869-1902.

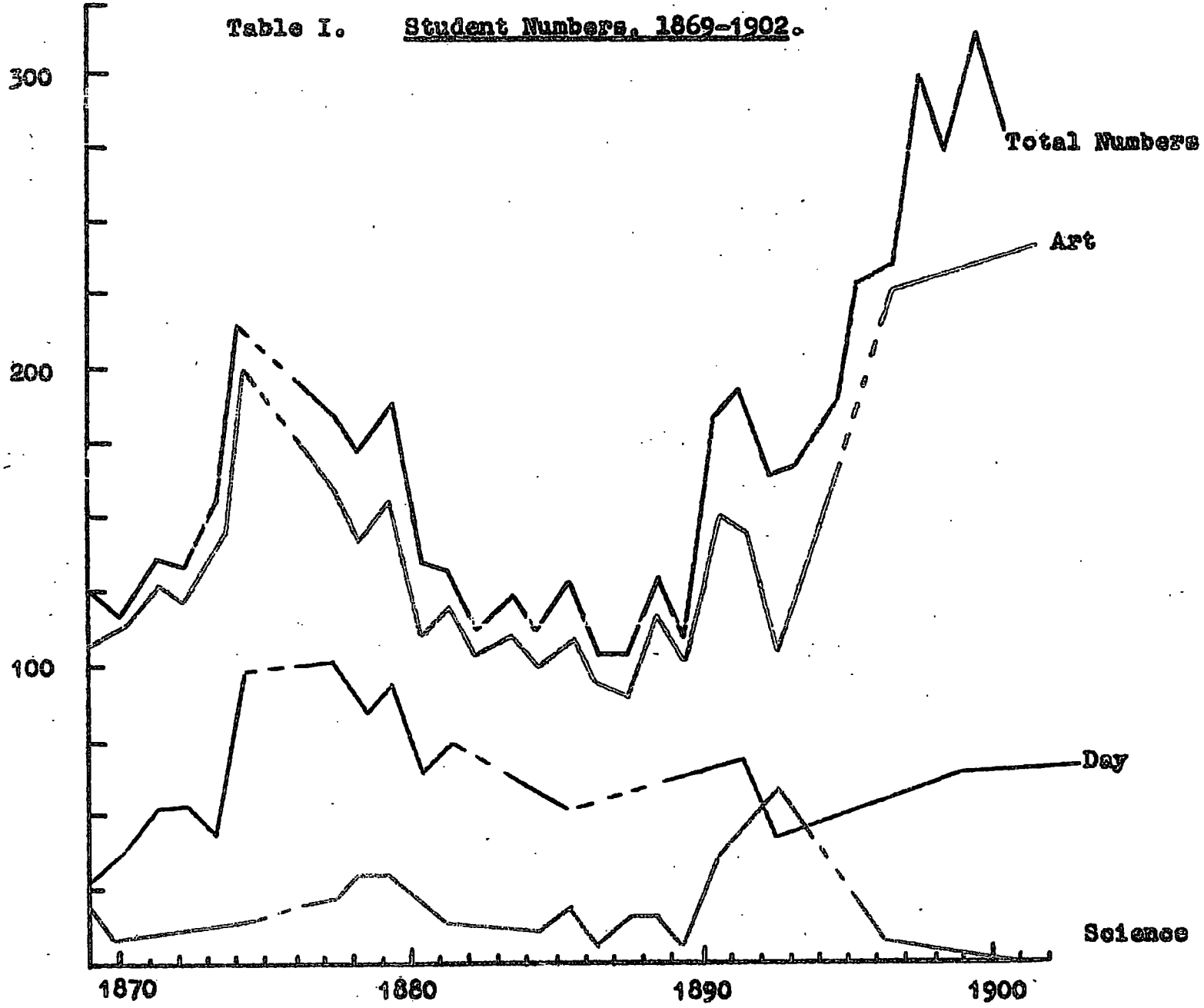


Table II.

Examination Successes,

A. ART.

	National Competition	Art Teachers Certificate Works	Advanced Grades	Elementary Grades
1883-4	3	---- Results Not Available ----		
1884-5	3	4	5	46
1885-6	1	4	12	29
1886-7	1	5	11	21
1887-8	1	10	7/17	34/38
1888-9	-	23	7/9	14/33
1889-90	-	21	9	11
1890-1	6	24	94	52
1891-2	5	15	69	111
1892-3	6	N.A.	32	147
1893-4	11	15	59	152
1894-5	5	25	110	182
1895-6	14	28	132	237
1896-7	14	35	165	237
1897-8	19	36	99/127	148/250
1898-9	10	29	103/130	157/213
1899-1900	7	9	111/143	37/46
1900-1	9	6	111/160	No Exam.

Total = 3.155

(School Minute Books - Annual Reports)

B. SCIENCE.

	Solid Geometry		Machine Constr.		Building Constr.		Prac. Plane & Solid Geometry		Elementary Design		Geom. Drawing		Plane Geometry		Architecture	
	E	A	E	A	E	A	E	A	E	A	E	A	E	A	E	A
1883-4			1													
1884-5			2		2		2	1								
1885-6																
1886-7																
1887-8											6					
1888-9													4			
1889-90													3			
1890-1					1		4									
1891-2			2								2	4			1	
1892-3	5		4			1							11			
1893-4			10	1	3											
1894-5	9		9	3	7	1								13		
1895-6	16		9	6	5	2							9			
1896-7	13		12	5	6											
1897-8	7		11	7	5	3				3						
1898-9	5	1	20	8	5	3				6						
1899-1900	11	8	8	1	4	4				5		8				
1900-1			8	9	7		1		2	5	4	3			1	

Total = 361.

(School Minute Books - Annual Reports)

Table III.

A Comparison of Examination Success Grants for Art and Science from 1884 to 1901.

	Art			Science		
	£.	s.	d.	£.	s.	d.
1884-5	117.	13.	6	Not Available.		
1885-6	111.	0.	0	3.	0.	0
1886-7	74.	6.	0	3.	0.	0
1887-8	83.	12.	0	2.	0.	0
1888-9	71.	6.	0	1.	10.	0
1889-90	56.	6.	0	2.	0.	0
1890-1	68.	6.	0	2.	13	6
1891-2	186.	4.	0	7.	12.	0
1892-3	218.	6.	0	19.	0.	0
1893-4	202.	0.	0	27.	0.	0
1894-5	288.	12.	0	20.	12.	0
1895-6	356.	0.	0	44.	0.	0
1896-7	326.	6.	0	46.	15.	0
1897-8	433.	9.	0	39.	5.	0
1898-9	376.	4.	1	36.	4.	11
1899-1900	363.	1.	4	57.	11.	7
1900-1	180.	0.	0	29.	11.	0

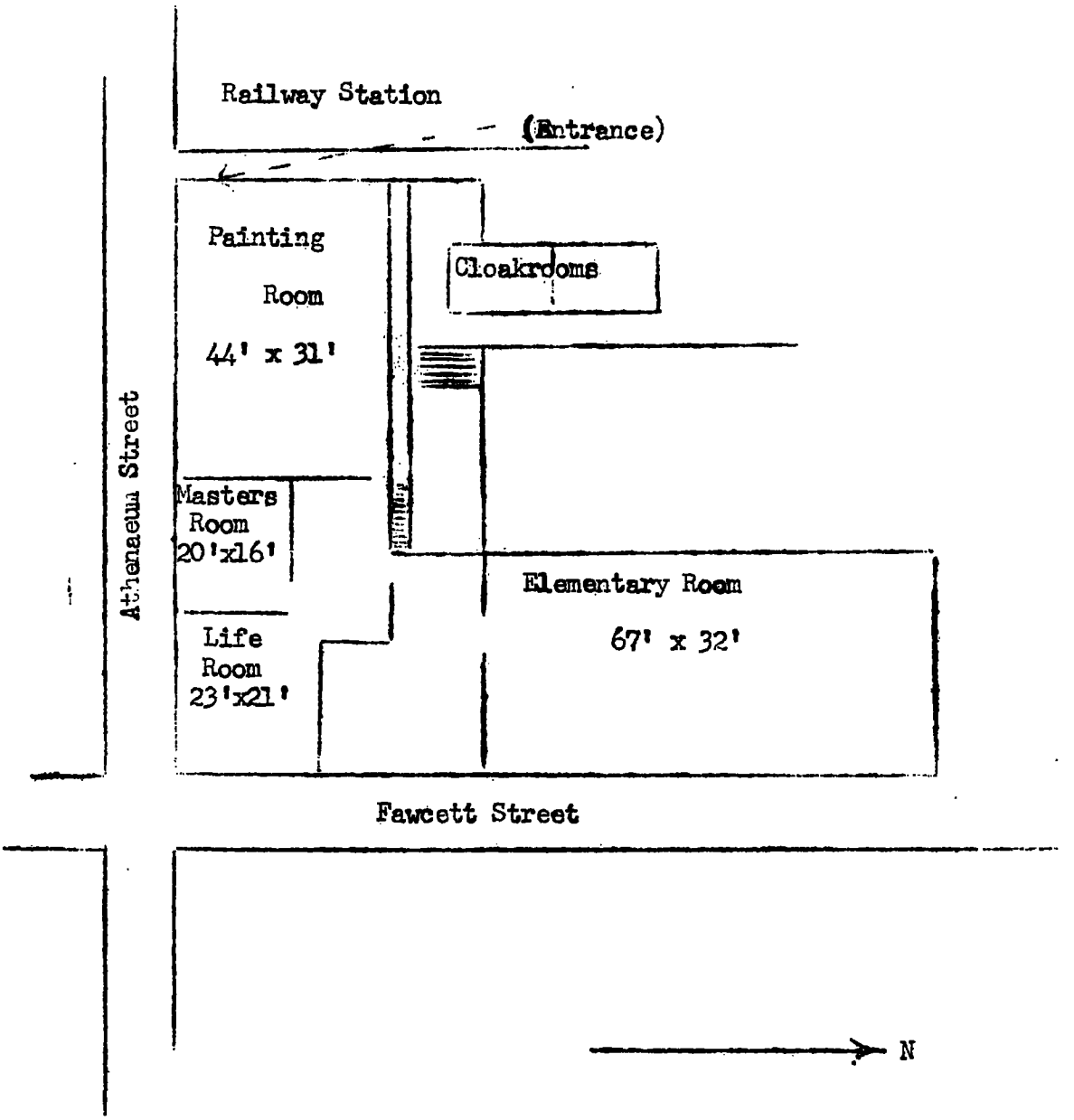
(School Minute Books)

NOTE: After 1897-8, grants were paid on attendances and not on examination results.

Appendix D.

Plan and Description of Town Hall Accommodation Given to the Science and Art School in May, 1891.

Plan



NOTE: This accommodation, now much altered, is occupied by the Legal Branch and Records Section of the Town Clerk's Department.

Description.

"The premises given by the Corporation comprise some 4000 square yards, and are situated at the south end of the Town Hall, the entrance being from Athenaeum Street, and the building so design that a separate staircase gives direct access to the rooms without interfering with the rest of the Town Hall. The school will practically occupy the whole of the top floor, and on arriving there, we come first to the large room under the clock tower, facing Fawcett Street; this is well-lighted, roof-lights having been put in specially for the school, and will make a large and commodious Elementary Classroom. The other three rooms face Athenaeum Street, and are some half dozen steps higher up than the one just mentioned, at the west end is the painting room, with a good north light; next to it, in the centre of this side, is a useful room for the master; with one for life classes adjoining it at the east end. There are also separate lavatories and cloakrooms, and an abundance of store closets.

The new rooms have recently been furnished in a handsome style, and they are, in every sense, worthy of the building. All the apparatus and fittings are strictly in accordance with the design and directions of the headmaster. In all the rooms the light has been specially adapted, by means of curtains, in such a manner as to secure a good steady light from

the north or east at any time of the day. The painting room is arranged so that twenty students can paint from still life at one time, each group being well lighted from the north. In the life room a strong concentrated east light has been obtained, and a similar light in the large elementary room. But excellent as this is, it is, if possible, eclipsed by the gas arrangement for the evening classes. In the elementary room, four powerful 'Meteor' lights and twenty-eight duplex sidelights are used, and every light is ingeniously shaded off from the rest. The object is for second grade subjects, third grade model, and drawing from the antique to be taken in the body of the room, whilst outline from cast, shading from cast, tempera painting, and design are taken at the sides of the room. When no second grade work is going on it is possible for a hundred advanced pupils to work comfortably at one time. In the science and life room a strong 'Meteor' light is fixed, and in the modelling room there are extra centre and side lights. Six large board racks have been ordered, two of which only have arrived. They contain drawers and separate partitions for board and canvasses. Large chests of drawers are being made, in which to keep the drawings etc. The various rooms are provided with 150 movable seats and tables. The modelling room has been fitted with substantial modelling desks and tanks with clay. There are 50 modelling slates

of special design on order. Round the walls of the elementary room is a clever arrangement of desking and battens arranged for light and shade work, and it is considered that the most perfect conditions for the required effort have been obtained. A large stock of casts is expected shortly, having been selected in London by Mr. Stubbs. The rooms are fitted with immense Darlington slate boards throughout, and special attention has been given to the apparatus for teaching solid geometry."

Plan and Description from the 'Sunderland Daily Post' of 15th September, 1891.

Appendix E.

Correspondence Between Mr. James Patterson, Secretary of the Sunderland Science and Art School, and 'Technical', an anonymous correspondent of the Sunderland Daily Echo.

Sunderland Daily Echo, 3rd February, 1894.

"To the Editor,

Sir,

At the last meeting of the Technical Education Committee, the account of which appeared in your Saturday's issue, certain important recommendations were made as to the disposal of the funds now in the hands of the Committee. One of these was that part of the money should be spent in making annual subsidies to science schools at present existing in the town. Without here inquiring how far such schools generally can be said to further the cause of technical education properly so called, I would respectfully ask on what grounds the Government School of Science and Art in particular is entitled to receive the lion's share of the amount which it is proposed annually to divide, as well as an additional grant of £250 to clear off its debt?

The report states that the committee have been strongly urged to make this subsidy in lieu of the Government grant, which is no longer given to elementary teaching, but I would point out that the withdrawal of the grant for elementary teaching is in respect of science subjects only, those for art remaining the same as before. Now, as everybody who knows anything about the matter is aware, the Government School of Science and Art teaches art only, science occupying

an absurdly insignificant place, such as gives no warranty whatever for the misleading title the school assumes. A glance at the last return shows that but a fraction of the students were engaged in science subjects, viz. geometry, and machine drawing, the great bulk sitting for art pure and simple, and if we exclude geometry, which is here studied for art purposes, I take it, we have last year, four students obtaining bare passes only in machine construction out of a total of probably 100 students on the books for all subjects.

This obviously is a mere travesty on science teaching and if the School of Art bases its claim to a subsidy on so hollow a pretence it is simply imposing on a credulous and ignorant committee, wholly unfit to be trusted with the disposal of the fund. If it be resolved to dispose of a portion of the money in the relief of science classes, the only just basis to go upon is the actual results of science examinations in the several schools, in which case, the share of the School of Art would be but a fraction of what it is now proposed to give. The recommendation is, indeed, on a par with the now historic proposal to apply the technical education funds towards the liquidation of the Town Hall debt, a very just and proper use for such funds, and exhibiting in a striking degree the enlightened views of those responsible for the suggestion.

The Science and Art Department already gives the greatest encouragement to art teaching, the grants being of a very liberal nature, while our School of Art has been most successful in its art work. Its students are mostly drawn from the better-to-do classes and can surely afford to pay for their art training. It is, therefore, difficult to understand the needy condition of the school. Be this as it may, however, the Technical Education Acts have nothing to do with relieving impecunious art schools, and to apply any of the money to such a purpose is a gross misuse of the funds and as such must be uncompromisingly condemned.

I would not be understood to disparage art study. Art has a lofty function, and its pursuit constitutes a legitimate end and purpose of life, whereas all industrial operations are but a means to life. Nor have I any quarrel with the School of Art, it is a good institution doing good work. But, the cultivation of art is purely a matter of leisure and opportunity. What technical education is concerned with is work, handicraft, the attainment of skill and knowledge necessary to the furtherance of our industrial prosperity. Neither has technical education anything to do with those cases even where art is pursued as a means of livelihood. The sums levied on the country for the furtherance of technical education are only rightly expended in a town like Sunderland

upon instructing our youth in the theory and practice of those crafts which form the staple industries of the port, and it will surely be difficult to reconcile with this purely utilitarian purpose studies in freehand drawing, model drawing, modelling in clay, principles of ornamentation, still life, drawing from antique and monochrome, as pursued practically exclusively by the School of Art.

Thus even in the event of the art grants being reduced, as well as those for science, the School of Art, as such, could not lay a shadow of claim to be helped along by technical education money any more than the ratepayers of Sunderland could legitimately pay for their Town Hall out of it. I submit that any representation made by the said School for participation in the proposed subsidies is a sconce, and displays a sophistication and a 'commercialism' unworthy of the high purposes subserved by the School.

I respectfully commend the foregoing elementary considerations to those responsible for the fund. If it be resolved to expend part of the money in the meantime, let it be appropriately applied and equitably apportioned; let there be no jobbery with it. Personally, I am in favour of the fund being kept intact until its accumulation justifies preliminary steps being taken in a scheme worthy of the industrial importandce of the borough. But if it is to be broken into - hands

off, Town Hall Committee and Art Schools!

Yours &c.,

TECHNICAL."

Sunderland Daily Echo, 6th February, 1894.

"To the Editor,

Sir,

On Saturday last there appeared in your contemporary a letter signed 'Technical' which contained so many misleading statements about Sunderland School of Science and Art that I should like, with your permission, to answer it, although I should have done so with more pleasure if the writer had signed his name.

I propose to deal with his statements seriatim.

'Withdrawal of elementary grant.' 'Technical' says that "grants for art remain the same as before." He is evidently unaware that all grants for elementary art work were withdrawn several years ago. This would at present amount to at least £60 per annum to this School. He is also unaware that the grant for second grade art works is now deducted from the advanced grant in the same subjects. He is also unaware that one advanced subject (Plant Outline - an important one in our School) is withdrawn entirely, and two other advanced subjects are paid on as elementary. The total loss to the School in this year through these and similar deduct-

ions amounted to £47. 10s. He is also apparently unaware that almost all art prizes, both elementary and advanced are now cut off, which at a very modest estimate, means an annual loss of about £40. He is also ignorant of the fact that, as stated in the Science and Art Directory, page 60, "The grants for fittings, apparatus, and examples are suspended while the Local Taxation Act remains in force." If this does not mean that the Government intends schools of art to be aided by the Corporations from the Local Taxation Fund, I should like to know what it does mean.

'The science taught'. Before making such a statement 'Technical' might have taken the trouble to find out what is taught in this school. For his information I may say that the science taught is exactly the same science that is taught in all other science schools in the kingdom, viz. plane and solid geometry, (there is no art geometry now), building construction and machine drawing. In these three subjects combined about 50 artisan evening students are taught.

'The School of Art bases its claim,' not on science alone, but on its work throughout. I am surprised that 'Technical' does not know that no modern technical school can be complete without an art side to it. The present school has proved itself fully competent to occupy this position and even 'Technical' himself says "it is a good institution doing good work." I will presently show that the school will be able

to perform this important part of the work at much less cost than if an art department of the Technical College has to be built, equipped, and maintained out of the Local Taxation Fund.

'Imposing on a credulous and ignorant committee.' Surely, the members of the Corporation are competent to select their own committee and to uphold it. Such an expression is an insult to the Council. I may say that many schools of art are receiving much larger grants from the Local Taxation Fund than the moderate one proposed to be given to this school. Surely 'Technical' cannot be altogether ignorant of this. Here are a few examples taken at random:- Bristol, £1000; Brighton, £1400; Nottingham, £750; Newcastle Durham College, £900; Rutherford Science and Art School, £900; Sheffield, £600; Manchester, £900. Are all these committees "credulous and ignorant"?

'Art grants of a very liberal nature.' For 'Technical's' special information I may point out that all examination grants for art are much smaller than those for science, for instance:-

In elementary art a first class earns £1; elementary science, £2.

In elementary art a 2nd class earns 10s; elementary science, £2.

In advanced art a 1st class earns £2; excellent, £3; advanced science 1st class, £5.

In advanced art a 2nd class earns £1; advanced science 2nd class, £2. 10s.

While the percentage of passes throughout the country in science is much greater than in art, I may also add that the average art grant in all the schools of art in the kingdom is 13s. per head, but our school is so much in advance of others that the grant per head for the past three years has been over 30s. In this respect, and also in the number of national competition awards (the highest possible) it has stood at the head of all art schools and classes in the four northern counties during the same period. Is it honest to cry down this school because of its unusual success? Is it not wiser to extend the work of a school which has shown itself so competent?

'Students from the better-to-do classes.' Will it surprise 'Technical' to know that two-thirds are evening or artisan students, of whom there are about 120 on the registers this year? The school has never been so well attended by artisan students as in the last few years. No Council aid has been asked for the day classes, nor is it intended to apply any of the Council aid to this purpose.

'Art is a matter of leisure.' Really, I am aurprised at 'Technical'. Drawing is a universal language for all work-

men and enters into many trades. Art schools were from the first instituted for the sole purpose of improving the trade of the country. Listen to what is said by Mr. Sparkes, Principal of the National Training School, South Kensington:- 'Technical drawing is that which has relation to trade industries, whether mechanical or artistic, and viewing the question in this light it may be said that all the schools teach technical drawing, for work done with the aid of instruments and all freehand drawing essentially underly all trade drawing; and it is the commonest thing in the world to hear that workmen who have attended the drawing classes are preferred above those who have had no such opportunity, because they are able to work from drawings. Even a slight acquaintance with geometry is of the utmost service to working engineers, smiths, builders, boilermakers, shipwrights, etc... .....The practice of modelling is the basis of all good carving in marble, stone, or wood, of iron and brass founding, pottery, etc.'

All the elementary teaching is especially technical. Freehand drawing, model drawing, perspective, geometry, architecture, and design are of at least as much importance to workmen of this town as, say, chemistry, mathematics, etc., which form leading subjects in the proposed Technical College.

'The fund kept intact.' The fund is meant to be

spent annually for technical education, and may be withdrawn, as I have been informed by Government Inspectors, if not so spent. But supposing the fund is kept intact until sufficient is saved to build a large technical college, what is to become of the present school and classes? Will they not in the meantime languish until, when the college is ready, a start has to be made from the very bottom, whilst at present these schools and classes can be maintained efficiently at a comparatively small cost?

Having corrected 'Technical's' erroneous statements, I will, if I may trespass further on your space, state why, in my opinion, aid should be given by the Council to the School of Science and Art. First, the debt which it is proposed to clear off is largely for fittings, etc., purchased for the new premises in the Town Hall to make the school efficient. Supposing, as 'Technical' wishes, the Corporation do not subsidise the school as part of their scheme, then the Corporation will have to build and maintain an art side to the proposed Technical College, which will cost many thousands of pounds in addition to the present estimate. I appeal to all true economists to take note of this. The Corporation are morally bound to make up to the School the loss caused by grants withdrawn by the Government with the intention that such should be made up from the Local Taxation Fund. This

moral obligation is recognised by the Technical Education Committee.

The following are some of the purposes to which the School of Art Committee propose to apply the annual subsidy from the Council:-

(a) To extend the work of the evening classes, and form classes for elementary teachers.

(b) To increase the staff, and obtain the best available talent.

(c) To establish branch classes in the more distant parts of the town.

(d) To extend, especially, technical and scientific subjects, viz. geometry, building construction, machine drawing, architecture, and design generally.

(e) To form classes for wood-carving, etc., for which aid has been withdrawn by the government.

(f) To form a library of scientific and technical books for the use of students, as recommended by the Government Inspector on his visit in November last.

(g) To reduce the evening class fees so as to bring them within the reach of the poorest.

(h) To provide prizes in place of those withdrawn.

(i) To provide popular lectures on technical art.

In conclusion, may I say that I will be glad if 'Technical' will introduce himself to me, when I will take him to the

School and give him any further information he may desire.

Yours &c.,
JAMES PATTERSON, Hon. Sec.

Sunderland Daily Echo, 11th February, 1894.

"To the Editor,

Sir,

In reference to Mr. Patterson's reply to my former letter, nothing he adduces affects my main contention. Taking the conditions of May last year we find out of 150 total passes there were only 16 in science subjects, viz., 12 in geometry and 4 in machine construction. The great bulk of the passes were in freehand drawing, model drawing, and shading; that is, in subjects which have but a remote bearing on technical education, and none at all on the kind of technical education we want in Sunderland. One-third of the passes are by lady students. Seven out of the twelve passes in geometry were obtained by ladies. Thus, nine passes only were gained by male students in the whole of the three vaunted science subjects. What, therefore, have the 120 artisan students been doing, of whom Mr. Patterson spoke? This requires looking into.

The truth is the School of Art concerns itself only in the most incidental way with either science or technical art. Its work is essentially in the subjects referred to above, viz., freehand and model drawing, and in crayon and water colour drawings from casts and still life, etc., as

witness its annual exhibitions of student's work - excellent enough in its way. And though the School should undertake to develop its science side, I hold that in this town the claims of science are paramount. No person can doubt that chemistry, mathematics, engineering, and naval architecture are of immeasurably more importance to our youth than wood carving, or clay modelling. The facilities for teaching the principles of science underlying our staple industries are at present miserably inadequate, and a disgrace to those who hold the wealth which these industries have brought to the town.

In the meantime, the School of Art can well wait, Mr. Patterson to the contrary. Art teaching already pays much better than science, for the simple reason that in nearly every art subject Government grants (as high as £3 per head) may be gained for works executed in class during the season, whereas in only four of the 25 science subjects recognised by the Department can this grant be earned. It thus already secures a grant far in excess of what is obtained by the most successful of science schools. It is further assisted by the Corporation, and has state apartments, rent free, in the Town Hall. In view of all these circumstances, therefore, is it not a waste to assign to the school out of technical education funds an amount which reckoned out per head on the bona-fide technical or artisan students, would

exceed some twenty or thirty times what is proposed to be given to the all-useful science schools? What Brighton or Bristol may do in endowing art schools may not suit Sunderland, and already complaints are abroad as to the inequitable way in which the funds are being applied in certain towns. Is Sunderland likewise to lay itself under censure? The Technical Instruction Act of 1889 defines technical instruction to 'mean instruction in principles of science and art applicable to industries,' and provides further that a local authority shall distribute the 'provision in proportion to the nature and amount of efficient technical instruction supplied' by the several schools. Here is a safe rule for the committee to go by.

Let me say again that I write with no feeling of hostility to the School of Art in its capacity as such. But I am not alone in holding that in this matter of technical education its claims are being most unwarrantably pushed forward on the one hand and as unduly favoured on the other.

Yours &c.,

TECHNICAL."

Sunderland Daily Echo, 14th February, 1894.

"To the Editor,

Sir,

I will not trespass on your space more than I can help in replying to the letter from 'Technical' in your issue

of Saturday last.

'Technical' is quite right in saying that art predominates over science in the Sunderland School of Science and Art. No one denies it. But he should not complain that so many ladies succeed in obtaining passes. Surely the time for that sort of thing is past. Is he a 'woman-hater' that he would deny our female evening students, who are all elementary school teachers, the right of working for their livelihood? Do they not deserve as much consideration as the male students who are training themselves for skilled occupations?

He asks what our 120 evening artisan students are doing. They are preparing for 21 different Government examinations, chiefly connected with their means of livelihood, and embracing almost the whole of the ground of technical art as laid down by the Art Department.

I will prove that art teaching does not 'pay' better than science teaching, as 'Technical' wrongly states. In the Department's 36th Blue Book, p. 78, 'Technical' will find particulars of science and art grants for the eight or nine years previous to the withdrawal of grant on elementary art works. A little calculation on his part will show him that the grant per head is slightly less than two-thirds of that for science. I hope 'Technical' will spare me the trouble

of rectifying such gross mis-statements in future.

If this school has gained more grant per head than the average it is because it has the good fortune to have in its headmaster a man of exceptional ability.

The Technical Education Committee proposes to build a college for science and art teaching; they, however, find the present school of art, thanks to the Corporation, in good premises, and thanks to the masters, doing good work, so they propose to utilise it as it stands for the art side of their scheme, and, in order that it may do increased work, they propose to give it the subsidy which 'Technical' complains of. For science it is proposed to build the college at a cost of many thousands of pounds, and to devote the remainder of the funds to science teaching. 'Technical' complains also that the School of Art has 'State apartments'. Is not science to have state apartments on a much larger scale? and rightly so.

The income from the Local Taxation fund is about £2000 per annum, and of this, it is proposed to give £250 to art and £1750 to science - i.e., science gets seven times as much as art. I fail to see what 'Technical' has to grumble at. Such a proportion is not too much for art, even supposing that at the School of Art nothing was taught but art. I think any reasonable man will hail with delight the fact that the committee of the School of Art are thus enabled to save the

town so much money. 'Technical' knows quite well that the £250 is not given to the School of Art itself, but to the town, as extra work and responsibility will be thrown onto the Managers.

It appears to me that the position which 'Technical' occupies is the narrow one of an advocate for the teachers of certain science subjects, as against the broader position of science teaching itself for the benefit of the town at large.

I hope that I have not, in defending the School of Art, in any way made reflections upon the present science teachers of the town. I know too well the difficulties under which they labour, and congratulate them upon the prospect of brighter things.

Yours &c.,

JAMES PATTERSON, Hon.Sec."

Appendix F.

Statistics Relating to Sunderland Technical College, 1901 to 1908.

Table I.

Student Numbers.

	Day	Evening	Saturday Morning	Total
1901-2	30	671	12	713
1902-3	35	589	17	641
1903-4	40	508	91	639
1904-5	53	545	44	642
1905-6	49	540	—	589
1906-7	45	460	—	505
1907-8	54	530	—	584

(Principal's Reports and Newspaper Reports).

Table II.

Board of Education Grants (to nearest £).

	Evening	Day
1901-2	£391	None paid
1902-3	£650	None paid
1903-4	£800	£124
1904-5	£900	£156
1905-6	£828	£208
1906-7	£502	£258
1907-8	£507	£361

(Principal's Reports and Newspaper Reports).

Table III.

Evening Classes - Student Numbers by Subjects,

1906 to 1908.

Subject	1906-7	1907-8
Mathematics	66	81
Physics	23	12
Electrical Engineering	84	58
Mechanical Engineering	100	121
Building Construction	42	50
Naval Architecture	48	48
Chemistry	37	62
Botany	37	37
Mining	—	7
Languages	83	73
Commerce	29	16

(Principal's Report, 1909, p.12)

Table IV.

Student Hours, 1906 to 1908.

	Day	Evening
1906-7	30.847	18.784
1907-8	34.160	23.073

(Principal's Report, 1909, pp.11,13).

Table V.

Growth of Staff, 1901 to 1908.

	Full-time			Evening
	Lecturers	Asst. Lecs.	Lab. Sts.	
1901-2	4	6	-	7
1902-3	5	5	3	7
1903-4	5	7	4	7
1904-5	5	7	4	7
1905-6	6	7	4	7
1906-7	6	5	4	16
1907-8	6	5	3	21

(Principal's Reports).

Table VI.

Examination Successes, 1901 to 1908.

	Day	Evening
INTERNAL		
Associateships of the College:		
Honours, Mechanical Engineering	5	
Ordinary, Mechanical Engineering	7	
Ordinary, Electrical Engineering	4	
Ordinary, Naval Architecture	1	
Certificates of Proficiency:		
Honours, Electrical Engineering		1
Ordinary, Mechanical Engineering		1
Ordinary, Electrical Engineering		12
Ordinary, Naval Architecture		1
Ordinary, Chemistry		2
Shipwrights Prizes:	8	
Sir William Allan Scholarships:	3	
EXTERNAL		
London University:		

continued.....

Table VI continued...

	Day	Evening
B.Sc.(Engineering) Honours	1	
B.Sc.(Pure Science) Pass Degree		2
Intermediate Science Examination	5	
Matriculation Examination	2	
Board of Education:		
Whitworth Exhibitions	2	1
National Scholarships		2
King's Prizes:		
Inorganic Chemistry		1
Practical Geometry		1
Building Construction		1
Medallists:		
Building Construction		1
Naval Architecture		1
Certificates (1908 only):		
2nd Class Honours		6
Stage 3, 1st Class Pass		12
Stage 3, 2nd Class Pass		42
Stage 2, 1st Class Pass		26
Stage 2, 2nd Class Pass		113
City and Guilds of London Institute:		
Prizemen and Medallists:		
Silver Medals:		
Brewing		1
Iron & Steel Shipbuilders Work		2
Bronze Medals:		
Plasterers' Work		1
Boilermakers' Work		1
Iron & Steel Shipbuilders' Work		1
Metallurgy		1
Certificates (1908 only):		
1st Class Honours		2
2nd Class Honours		1
1st Class Ordinary		24
2nd Class Ordinary		28
Preliminary		10

(Honours Lists - Prospectuses).

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