

## **The Microscopes of Goodsir**

**As Presented to the Quekett Microscopical Club, the University of Edinburgh, and the Anatomical Museum, Compiled by Michael T. Tracy**

It is not clear who invented the first microscope, but the Dutch spectacle maker Zacharias Janssen (b.1585) circa 1600 is credited with making one of the earliest compound microscopes that used two lenses and could magnify an object up to twenty to thirty times its normal size.<sup>1</sup> As the centuries passed, the development of the microscope allowed scientists to make new insights into the human body and disease. The venerable microscopic observations of my kinsman, John Goodsir are well noted throughout his illustrious career. Goodsir had an early interest in the microscope and its usage. In a letter to his father dated 9 November 1835, John informs his father to pack his microscope and also his white coat which he needs, and writes that he is “anxious enough to try my hand at the old work again.”<sup>2</sup> Goodsir’s understanding of the intrinsic value of the microscope to medical and clinical observation resulted in his crowning innovation as a university medical educator of international stature – the first introduction of the microscope into the medical curriculum for medical undergraduates in the United Kingdom.

Smith & Beck was the successor company to James Smith (1800-1873) one of the most highly regarded microscope manufacturers of Victorian England.<sup>3</sup> In 1826, Smith was contracted by Charles Tulley to produce a novel frame for an achromatic microscope that had been ordered from him by J.J. Lister who had taught Smith the intricacies of grinding lenses, and beginning in 1839, Smith began retailing microscopes under his own name.<sup>4</sup> In 1847, James Smith took as a partner, Richard Beck (1827-1866) the nephew of J.J. Lister to which the firm was named Smith & Beck of 6 Coleman Street, London.<sup>5</sup> In 1857, Joseph Beck (1829-1891), Richard’s younger brother joined the partnership, forming Smith, Beck, and Beck and after James Smith resigned from the company, he did not retire from the business completely, was subsequently reorganized as Beck and Beck/R & J Beck.<sup>6</sup>



Fig.1. A carte-de-visite photograph of James Smith. It was prepared by photographing an earlier photograph of Smith, which microscope maker William Wales had obtained from Smith. Adapted for nonprofit educational purposes from an internet auction site.

### **Smith & Beck Delivery Books 1839-1865**

There are two surviving Smith & Beck Delivery Books which are half-width foolscap order books covering Goodsir's time as a Professor of Anatomy at the University of Edinburgh. Book I contains an index of names and has been copied as facing pages, as both are used together across their combined widths to record the details of each sale as well as the type of stand being sold. Book II omits details of the stands and therefore each page width is the full record. Both books cover microscope serial numbers 1-3232. The Quekett Microscopical Club has graciously provided the images of Professor Goodsir's microscopes that he purchased as extracted from their website. Mr. David Walker has kindly assisted me with the further elucidation of Books I and II of the Smith & Beck Delivery Books covering the period from 1839-1865. The first column is the serial that would have been on the base of the microscope at the time of delivery. The reason for this is that if a model is found with a serial it can be uniquely tracked back to the Delivery Books and each entry is for one unique

microscope. In the late Brian Bracegirdle's work entitled *Notes on Modern Microscope Manufacturers* (1996) the serials are confirmed, as his serial numbers with dates match those in Book I. The last but one column just gets ticks "D" initially has an "A" for many entries then "B" seems to increase over the pages with no apparent pattern. As they slowly increase this might be an internal number for the model as it is made along with others until it finally gains the serial number inscribed on the stand in the first column however, this is a supposition at this point. Furthermore, there could have been separate production lines for each model which would explain why for sequential serials numbers there is a mix of model types. This column may also be cataloguing other aspects of manufacture, dispatching, etc., and remains unclear. The last column is the date that the microscope/microscopes were sent to Professor John Goodsir.

### **Book I, Page 5**

In 1846, Professor Goodsir purchased one Best Microscope, Serial 138, a tick than "B 14" sent on 21 November 1846.

132	Best Microscope		Mr Wm Tweediff	S B 10	8/5/66
(132)	Do	Do	Capt Minorsfield Esq.	S B 19	22/1/46
133	Do	Do	Mr Wm Watson Newbold	B 10	25/1/46
134	Small	Do	Mr Paul Austin	S B 13	25/1/66
135	Best smaller		Mr Bolting	S B 32	27/2/47
136	Small	Do	Mr Tomkins	S B 18	
137					
138	Best	Do	Prof Goodwin	S B 14	28/1/66
139	Do	Do	Mr Wm Alexander	S B 17	
140	Small	Do	Saml Gurney Junr	S B 15	8/5/67
141	Do	Do	Dr Thompson	S B 18	10/1/66
142	Best.	Lever	J. G. Jansen	B. 22	1/1/66
143					
144	Best	Do	Mr Engelley	S B 29	28/1/67
145	Small	Do	Mr Wm Nicoll	S B 36	18/1/67
146	Best	Do	Mr Bentley Bowell	S B 64	8/1/67
147	Small	Do	Henry Callaway	S B 42	2/6/47
148	Small	Do	D Lindsay	S B 40	2/4/67
149					
150					
151					
152					
153	<del>Best</del> Best.		Dr Bell	S B 52	17/1/67
154			Dr. H. Jones	S B 310	30/1/53
155					
156					
157					
158					
159	Best smaller		Dr Haviland	S B 49	15/6/67
160					
161	Best smaller		Mr Brown	S B 46	2/6/67
162					
163	Best smaller		Mr Robinson	S B 128	25/1/68
164	Best smaller		Mr Alfred Roberts	S B 221	2/1/67

Fig.2. Extracted from Book I, Page 5, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series



These earlier microscopes may have been signed “Jas. Smith” and had two bars supporting the tube and predate when Smith & Beck was formed. There are two that span Serial 138. Figure 3 is Serial 133.



Fig.3. An Early James Smith Microscope, English, dated from the Beck Records, 25 August 1846, Signed to (the-saleroom.com)

Serial 144 is in the United States and is located in the Billings Collection as described in Figure 4 below.

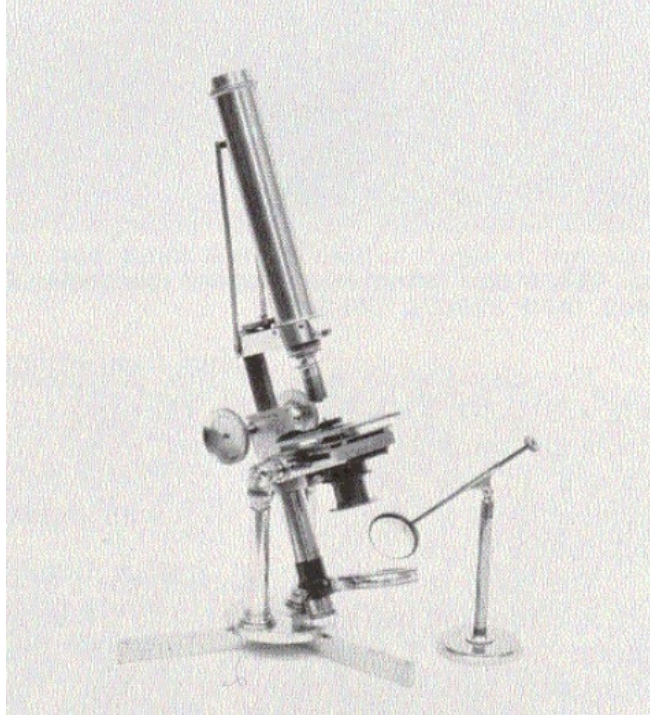


Fig.4. Serial 144 Improved Achromatic Microscope, James Smith, London: Compound monocular, 1846, Photograph Courtesy Billings Collection (AFIP 379059-69-10805)

**Book I, Page 31**

In 1855, Professor Goodsir purchased a Small Best Microscope, Serial 987 which is a unique model so he only purchased one. The last but one column entry is now up to “E307” and this microscope was sent to Goodsir on 23 November 1855.



			D.B.	Date
982	Small Students	W. A. H D Fryte	£ 296	24/10/58
983	Improve large	Mr John Curdson	£. 263	23/1/55.
984	Best Student	Mr Decker.	£ 162	24/9/58
985	Best Students	Mr. Mantell	£ 327	21/12/55
986	Best Students	Richardson & Co	£ 298	1/11/55
987	Small Best.	Prof Goodwin	£ 307	23/11/55
988	Small Best	W B Wholme	£ 495	14/11/58
989	Small Best Lever	John Goodie	£ 295	24/10/58
990				
991				
992				
993	Large Best	Mr. Armstrong	£ 350	9/2/58
994	Large Best	Miss Collins	£ 367	7/2/58
995	Large Best	Rev. J R Ashby	£ 309	24/11/55
996	Large Best	H. J. Wood	£ 324	24/11/55
996	Large Best	Jas Harby	£ 318	14/12/58
997	Large Best	Mr. Brownlow	£ 291	24/10/55
998	Small Students	Dr. Wagers	£ 341	24/1/58
999	Small Best.	Mr H J Eaton	£ 392	29/2/58
1000	Educational	R. Beck £15		
1001	do	N B. Ward £10	£. 248	11/7/55.
1002	do	Apothecaries Hall £10	£. 208	11/7/55.
1003	do	Elij. Beck £15	£. 249	11/7/55.
1004	do	Mr Whilbroad £15	J.B. 237	14/7/55.
1005	do	John Beck £10	J.B. 237	14/7/55
1006	do	W. Prouther £10	J.B. 249	14/7/55
1007	do	Mr. Brady £10	£. 253	25/7/55.
1008	do	J. Jackson for D. Leatherby £10	£. 256	1/8/55.
1009	do	J. Lucas £10	£. 253	25/7/55.
1010	do	Mr. Rivary £15	£. 253	25/7/55
1011	do	Chief for. Cole. £15	£ 331	7/1/58
1012	do	Mr. Grove £10	£. 254	20/7/55
1013	do	Mr. Hulwidge £15	J.B. 248	14/8/55.
1014	do	Mr. Barrett. £15	£. 258	9/8/55

Fig.5. Extracted from Book I, Page 31, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

**Book 1, Page 33**

In 1855, Professor Goodsir purchased one Educational Microscope, Serial 1055, and the last but one column entry is "E300" and this microscope was sent to Goodsir on 6 November 1855.



1048	Educational Microscope	C. F. Ravis	15 - -		
1049	do do	Mr Robt Duchyone	10 - -	E. 293	24/1/55
1050	do do	Mr A. Keblett		F. 235	6/2/58
1051	do do	Mr Walker	15 - -	E. 295	31/10/55
1052	do do	Mr Senior	10 2 6	J.B. 4	31/10/55
1053	do do	Mr Newer	15 - -	J.B. 5	31/10/55
1054	do do	Mr Ravis for Mr Rich	15 - -	E. 296	24/1/55
1055	do do	Mr Potter	10 - -	E. 293	25/10/55
1056	do do	Prof. Goodwin	15 - -	E. 300	6/1/55
1057	do do	Mr Mansfield	15 - -	E. 301	9/1/55
1058	do do	Mr Charles Knight	15 - -	E. 303	14/1/55
1059	do do	Mr J. Le Mesurier	15 - -	J.B. 11	14/1/55
1060	do do	Mr F. Haas	15 - -	J.B. 12	24/1/55
1061	do do	Mr Gray	15 - -	J.B. 9	14/1/55
1062	do do	Mr Church	15 - -	J.B. 16	24/1/55
1063	do do	Mr J. & Marshall	10 - -	J.B. 22	5/1/55
1064	do do	Rev W. Smith	10 - -	E. 310	24/1/55
1065	do do	Rev W. Smith	10 - -	E. "	24/1/55
1066	do do	Mr Lambert	10 - -	E. 317	12/1/55
1067	do do	J. Page	10 - -	E. 317	12/1/55
1068	do do	Gas Stuart	10 - -	J.B. 26	14/1/55
1069	do do	H. Conybear	14.16	E. 323	27/1/55
1070	do do	Sam. Lucas	10	E. 325	27/1/55
1071	do do	Mr Isaac Canell	14.17	E. 316	14/1/55
1072	Small Students	G. Bishop	10 - -	2269	9.2.68
1073	Small Students	Mr S. Smith	10 - -	J.B. 26	12/1/55
1074	Small Students	Mr Fennie		F. 71	28/4/57
1075	Small Best.	Dr Frazer Thomson		E. 409	24/5/56
1076		Dow Co of Downshire		E. 399	24/1/56
1077		Drripp			
1078	Large Best	Mr. Middleton		E. 344	24/1/56
1079	Large Best	Mr. RB Haines		E. 332	14/1/56
1080	Large Best.	Dr. Kelbart		E. 337	12/1/56

Fig.6. Extracted from Book I, Page 33, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

The Educational Microscope is described in William Benjamin Carpenter's 1857 work entitled *The Microscope And Its Revelations* and details the microscope. The drawing below represents an Educational Microscope however, it is not Serial 1055 that Goodsir purchased.

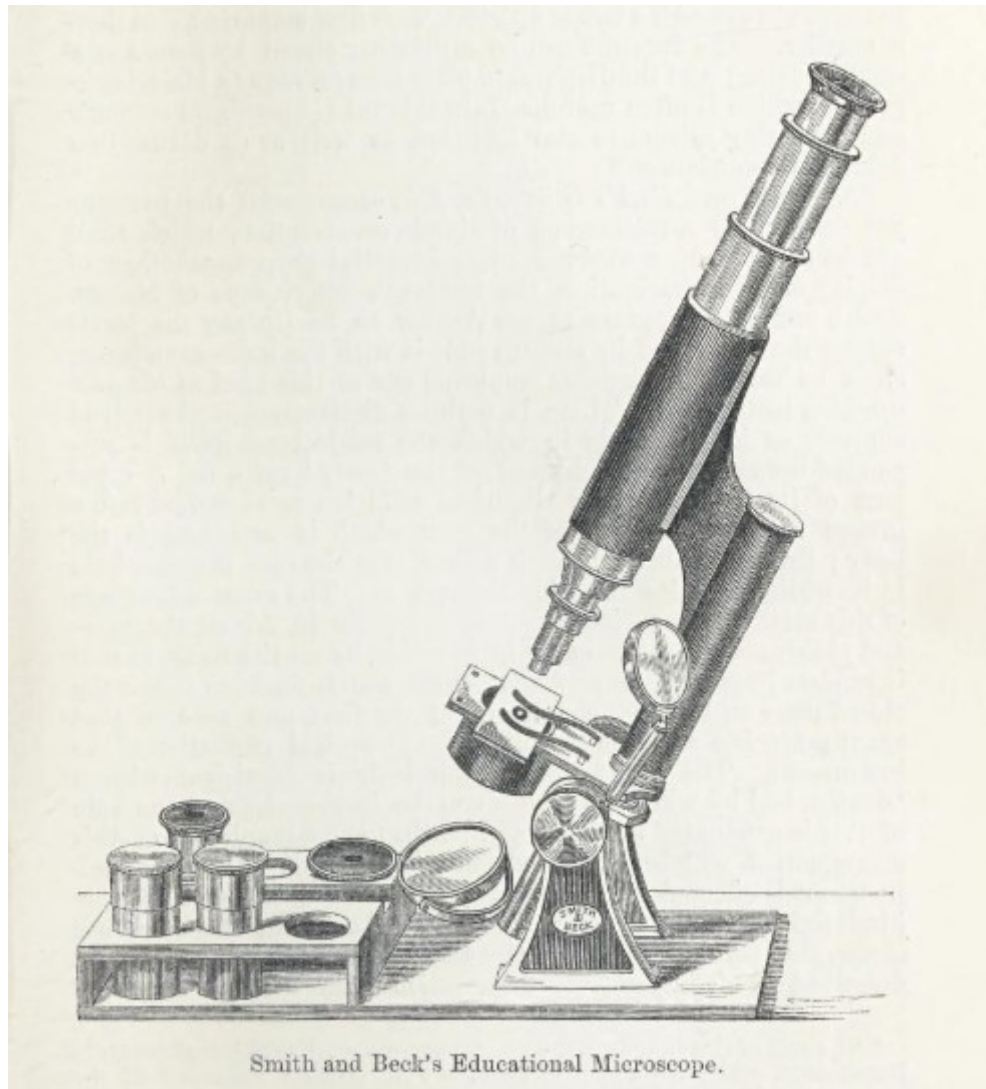


Fig.7. Smith & Beck's Educational Microscope, Extracted from Carpenter's *The Microscope And Its Revelations* (1857) page 77

**Book I, Page 39**

In 1856, Professor Goodsir purchased one Small Student Microscope, Serial 1267 and the last but one column entry is "E421" and the microscope was sent to Goodsir on 12 June 1856.



1266				
1267	Large Best	W Taylor	E 371	19/5/58
1268	Large Best	W Holdsworth	E 287	11/5/58
1269	do	F Ketteringham		
1270	do	J Blake		
1271	Best Plain Student	W. F. P. Jags	E 453	4/8/58
1272	Best Plain Student?	W. Bailey Montague	E 423	14/4/58
1273	Best Plain Student	W Walker	E 420	10/6/58
1274	Best Plain Students	Rev. R & H Ware	E 414	31/5/58
1275	Best Plain Student	Kemp & Co		
1276	Large Best	Mr. Thacker	E 412	29/5/58
1277	do	W. H. Pollock	E 400	30/4/58
1278	Large Best Portable	W. Cochrane	E 401	20/4/58
1279	Small Best.	W. Deane	E 463	20/5/58
1280	Small Best	Mr. R. H. Wiltshire	E 448	24/7/58
1281	Small Best	W. Taylor	E 426	24/6/58
1282	Large Best	Capt. Naylor	E 427	21/6/58
1283	Large Best.	W. R. C. Davis	E 425	19/6/58
1284	Large Best	W. J. Cooke	E 413	20/5/58
1285	Small Student	W. E. Capron	E 416	7/4/58
1286	Small Student	Prof. Goodwin	E 421	17/4/58
1287	Large Best Portable	W. W. Knight	F 30	23/7/57
1288	Best Plain Student	W. C. H. Gally	E 429	20/4/58
1289	Best Students act.	W. Pigger	F 31	28/5/58
1290	do do	W. J. Johnson	F 11	14/2/57
1291	Large Best	W. Jas. Aitken	E 435	7/7/58
1292	Best Plain Student	J. H. Higgins	E	7/7/58
1293	Best Plain Student	W. Routledge	E 432	7/9/58
1294	Large Best	W. G. Rhodes	E 440	20/7/58
1295	Large Best	W. Boyd	E 445	23/7/58
1296	Large Best	W. Addison	E 439	14/7/58
1297	Large Best	Pharmaceutical Socy	E 463	24/7/58
1298	Best Students	W. F. Howlett	E 488	31/10/58

Fig.8. Extracted from Book I, Page 39, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

Book II entries do not provide the model and prices were also not given in Books I and II. The last but one column continues with the letter and what looks like the initials possibly of the maker. The last column is the date but now just the month and year.

**Book II, Page 2**

In 1855, Professor Goodsir purchased a microscope, Serial 1055 and the last but one column entry is “E300” and the microscope was sent to Goodsir in November 1855.



1025	Chas. May	£264	£ 8
1026	M. Gray	£269	£ 9.5
1027	Mr. Boyd Moss	£258	£ 9.55
1028	M. Wheeler	£257	£ 8.55
1029	Prof. Smith	£266	£ 8.55
1030	M. Cooper	£252	£ 9.55
	Rev. J. Ashby	£263	£ 9.55
1031	M. Marshall	£293	£ 6.56
1032	E. A. Cooper	£255	£ 9.55
1033	Geo. Smith	£272	£ 9.55
	Small Island		
1034	Grove	£272	£ 9.55
1035	D. Harman	£256	£ 9.55
1036	Gardner for H. B. Brady	£276	£ 9.55
1037	C. Harris	£284	£ 10.5
1038	Weston	£274	£ 9.55
1039	Harvey & Reynolds	£277	£ 9.55
1040	E. Barclay	£276	£ 9.55
1041	J. Williams	£286	£ 10
1042	G. Stone	£260	£ 9.5
1043	D. Carpenter	£288	£ 10
	London	£286	£ 10
1044	J. J. Lester	£285	£ 10
1045	C. Wright	£285	£ 10
1046	Lady Isabella Whitbread	£287	£ 10
1047	Foryston & Brown	£269	£ 10.5
1048	C. F. Davis	£443	£ 3.1
	Dalzell		
	A. Webbitt	£235	£ 2.55
1049	A. Ducheno	£293	£ 10.55
1050	Walker	£295	£ 10.55
1051	Senior	£254	£ 10.5
1052	Haver	£265	£ 10.5
1053	Karis for M. Rich	£296	£ 10.55
	Potter	£293	£ 10.55
	Prof. Goodier	£300	£ 11.55
	Grove for M. Coad	£301	£
	Wright	£302	£

Fig.9. Extracted from Book II, Page 2, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

**Book II, Page 9**

In 1856, Professor Goodsir purchased a microscope, Serial 1267, and the last but one column entry is “E421 S.S.” and the microscope was sent to Goodsir in June 1856.



1255.	Kemp Ho.	BPS
1256	Mess <sup>r</sup> . Thacker.	£412 L.B. 5.56
1257	Prof <sup>r</sup> . Dyssen.	L.B.
1258.	H. Pollock.	£400 L.B. 11.56
1259	Cochrane	£401 S.B. 4.56
1260	Deane	£463 S.B. 5.56
1261	Rev <sup>r</sup> . J. Wiltshire	£448 S.B. 7.56
1262	Taylor.	£426 S.A. 6.56
1263	Capt <sup>r</sup> . Nayler.	£427 L.A. 6.56
1264	R.C. Davies.	£425 L.D. 6.56
1265	J. Cooke.	£413 L.A. 5.56
1266	E. Capron.	£416 S.B. 6.56
1267	Prof <sup>r</sup> . Goodwin.	£421 S.S. 6.56
1268	M <sup>r</sup> . Knight	£30 S.B. 2.57
1269	C. H. Gatty.	£429 S.B. 6.56
1270	Bigge	£314 B.S. 2.57
1270.	Cap <sup>r</sup> . Dawson.	£111 B.S. 4.57
1271	J. Aitken	£435 L.B. 7.56
1272	J. H. Higgins.	£ BPS 7.56
1273	Knottledge.	£452 BPS 8.56
1274	G. Rhodes.	£440 L.D. 7.56
1275	Boyd.	£445 L.B. 7.56
1276	Addison.	£439 L.B. 7.56
1277	Pharmaceutical Society.	£443 L.B. 7.56
1278	F. Ansell.	£488 B.S. 10.56
1279	Kushanan.	£439 S.S. 7.56
1280	Prince of Wales.	£465 L.D. 9.56
1281	Harford.	£496 L.D. 11.56
1282.	Mottam	£509 B.S. 12.56
	Carquet	£516 P.S. 12.56
1283	Paterson & Clarke.	£74 S.B. 5.57
1284	P. F. Freeborn.	£502 S.B. 11.56
1285	Lieut. Col. Kelner	£466 L.D. 9.56
1286		
1287.	Canby.	£470 S.S.

Fig.10. Extracted from Book II, Page 9, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

**Book II, Page 52**

In 1861, Professor Goodsir purchased a microscope, Serial 2808 and the last but one column entry is “H285 B.S.” and the microscope was sent to Goodsir in July 1861.



2805	J. Kapp	#267 B.S. 7.61
2806	G. T. Saub	#271 B.S. 7.61
2807		
2808	Prof. Gordon	#285 B.S. 8.61
2809		
2810	J. Bennett.	#282 S.S. 8.61
2811	H.B. Brady	#296 S.S. 9.61
2812		
2813	Hearon M <sup>o</sup> Culver & Co	#349 B.S. 11.61
2814		
2815	Lionell Kurrell	#314 L.B. 10.61
2816		
2817		
2818		
2819		
2820		
2821	Hon <sup>ble</sup> N. Jocelyn	#281 S.S. 8.61
2822	H.C. Sorby	#472 J. 5.62
2823		
2824		
2825	J. W. J. Sliff	#434 B.S. 2.62
2826		
2827	Geo. Sankey	#419 S.S. 2.62
2828		
2829		
2830	J. E. Koop.	#400 B.S. 1.62
2831	Murray & Co	#481 B.S. 12.62
2832	J. Reddow	#367 B.S. 12.61
2833	A. Newman & Co. Walter Scott.	#427 B.S. 2.62 #205 B.S. 1.62
2834		
2835		
2836		
2837	J. Saw	#386 B.S. 1.62

Fig.11. Extracted from Book II, Page 52, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

**Book II, Page 55**

In 1862, Professor Goodsir purchased a microscope, Serial 2926 and the last but one column entry is "H409 B.S." and the microscope was sent to Goodsir in January 1862.



2904	J. Wyman	#534	20	6.62.
2905				
2906	Ward & Co.	#422	20	2.62
2907	J. Lymbel <sup>Sinlay Hodgson &amp; Co.</sup>	#354	20	6.66
2908	J. W. Combs	#426	20	2.62
2909	J. D. Barden <sup>B. Simpson</sup>	#415	20	2.62
2910	Husband & Clark	J. 1	20	10.62.
2911	J. O. Lyles	#415	20	2.62.
2912	H. J. Church	#413	20	2.62
2913	H. Ross	#413	20	2.62
2914	H. Gill	#413	20	2.62
2915	J. Sheffield <sup>Miller &amp; Son</sup>	#410	20	3.62.
2916	J. B. Dancer	#410	20	1.62
2917	J. O. Lyles	#412	20	5.62
2918	Harvey & Reynolds	#412	20	2.62
2919	J. O. Lyles	#410	20	1.62.
2920		#413	20	2.62
2921	Goring	#420	20	2.62
2922	E. E. Hanson	#442	20	3.62
2923	H. Prigg <sup>J. R. Parker</sup>	#441	20	3.62
2924	Harvey & Reynolds	#445	20	3.62
2925	A. J. Hilton	#429	20	2.62.
2926	Prof. Goodwin	#428	20	2.62
2927	J. Sims <sup>Bolton</sup>	#435	B.S.	2.62
2928	W. Howell	#409	B.S.	1.62
2929	J. Mollett	#588	B.S.	11.68
2930	A. Simms	#432	B.S.	2.62
2931	J. Bolton	#413	B.S.	2.62.
2932	W. Ramsden	#863	L.B.	7.62
2933	Lord Rodney	#528	L.B.	7.62
2934		#527	L.B.	6.62
2935		#571	L.B.	5.62.
2936	Lady Kuster	266	J.L.	12.62

Fig.12. Extracted from Book II, Page 55, Photograph Courtesy of the Quekett Microscopical Club, Little Imp Archival Series

Although a little later *The Achromatic Microscope* by Conrad Beck published in 1865 gives an idea of how the models varied. Their designs may differ from the 1846-1856 models that Goodsir purchased.

As early as October of 1838, when Goodsir first met with Professor Robert Jameson, Jameson offered on loan to Goodsir one of Ehrenberg's<sup>7</sup> famous microscopes, the discoveries made with which had startled Europe.<sup>8</sup> In June of 1841, when Dr. Henry Lonsdale was presented with an elegant microscope by Chevalier of Paris by the students of anatomy of Queens College, James Maxwell Adams, the forensic scientist, remarked on the work of John Goodsir whose researches in microscopic anatomy have been and were attracting the attention of the scientific community.<sup>9</sup> Henry Lonsdale himself, in his early work of the *Case of Monstrosity*, acknowledged John's exceptional skills using the microscope writing, "In these inquiries, I had the valuable aid of my talented friend, Mr Goodsir, whose microscopical investigations are too well known to require any comment here."<sup>10</sup> As late as 1851, Robert Christison would call upon Goodsir to make various microscopic observations of numerous kidneys afflicted with Bright's disease which would form the basis for Christison's work, "Bright's Disease of the Kidneys."<sup>11</sup>

John Goodsir systematically used the microscope to illustrate his anatomical course,<sup>12</sup> and according to Lonsdale, Goodsir had an "Oberhaeuser<sup>13</sup> to aid him in his inquiries into the development of the Invertebrata of the Firth, and occasional use of Dr. John Reid's microscope, and one of Charles Chevalier's manufacture belonging to the writer [Lonsdale as described above], and probably also that of Dr. Martin Barry."<sup>14</sup> Dr. John Charles Hall,<sup>15</sup> in a letter to the *Sheffield and Rotherham Independent Newspaper* dated 7 October 1854 stated, "Go into the room of Professor Goodsir, of Edinburgh, and you will always see him using an instrument by Oberhaeuser, although 'no small degree of pride' would have been excited could you have seen the fine instrument by Ross in his possession."<sup>16</sup>

There is an interesting photograph of a microscope in Sir Gordon Roy Cameron's *Pathology of the Cell* (1952); the caption reads "John Goodsir's microscope which he used in his researches on the structure of cells, Courtesy of Prof. James Brash, Department of Anatomy, Edinburgh."<sup>17</sup> Although it is impossible to be categorical about this given the evidence of a single photographic image, the most authoritative museum source in this subject area concluded this is very probably an Oberhaeuser microscope, mid-nineteenth century, most likely manufactured sometime between the mid-1830s, to 1860.<sup>18</sup> There is also a note



attached to the box of the microscope which reads “Microscope belonging to Prof. Goodsir which he used in his researches on the structure and function of cells, Presented by R. Robertson, M.B., C.M.”<sup>19</sup>

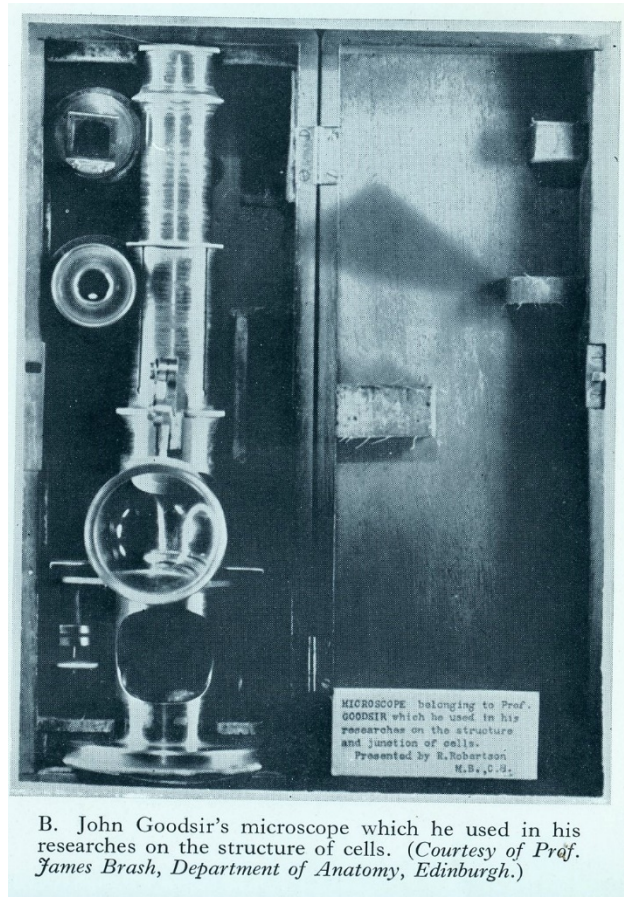


Fig.13. One of Professor John Goodsir's Microscopes, Photograph Courtesy of Gordon Ray Cameron, extracted from *Pathology of the Cell* (Edinburgh: Oliver and Boyd, 1952): 140

In the *Typescript Version of the Visitor's Guide to the Museum* is a further mention of this microscope which is reproduced below.

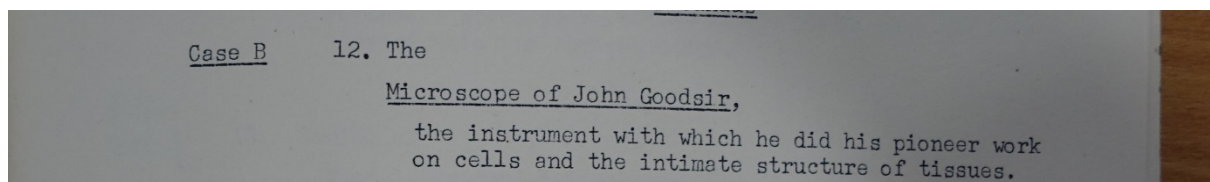


Fig.14. Extracted from the *Typescript Version of the Visitor's Guide to the Museum*, Photograph Courtesy of the Centre for Research Collections, University of Edinburgh Library, Reference: EUA/IN1/ACU/A2/16/26, Image 06690

For further information please consult the Eightieth Compilation entitled *The Microscope and John Goodsir*.

Even in his own writings, Goodsir alluded to the use of microscopes in the classroom specifically in his Winter Course 1859-60 writing, “Microscopic structure is examined and demonstrated in a class room fitted up for this purpose, and provided with simple and compound microscopes, and other necessary apparatus.”<sup>20</sup>

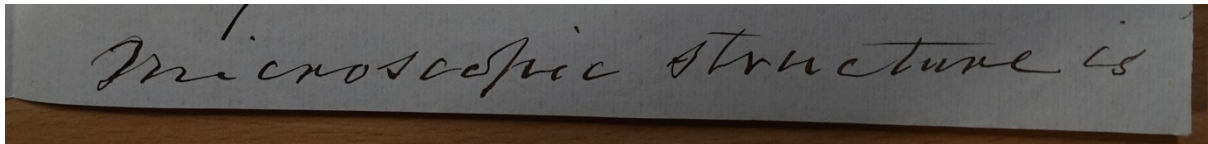


Fig.15. John Goodsir’s Notes on Anatomy, Winter Course 1859-60, Photograph Courtesy of the Centre for Research Collections, University of Edinburgh, Reference: Goodsir Papers, Gen 290, Box 1, Folder 3, Image Number 4839

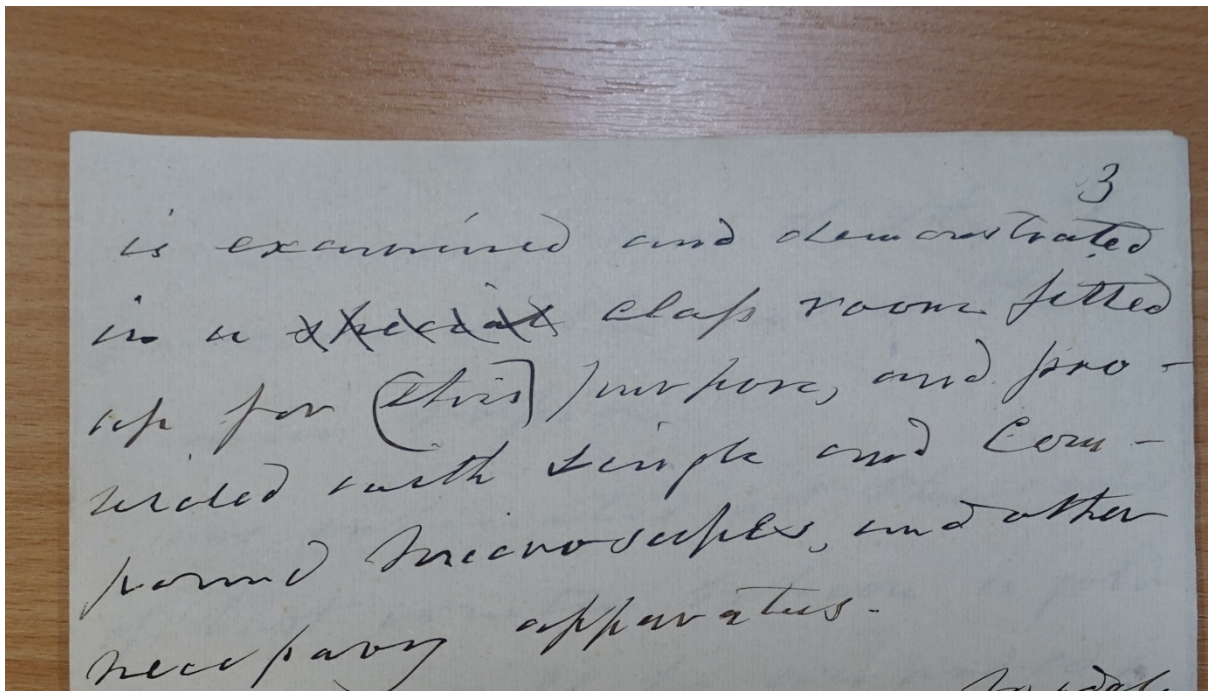


Fig.16. John Goodsir’s Notes on Anatomy, Winter Course 1859-60, Photograph Courtesy of the Centre for Research Collections, University of Edinburgh, Reference: Goodsir Papers, Gen 290, Box 1, Folder 3, Image Number 4840

Goodsir also, it should be noted, warned of the pitfall presented by the use of the microscope which he delivered in a lecture before his freshman class in anatomy stating, “It would be strange if I, who have derived both pleasure and instruction from the use of the microscope; and who have had it in my hands almost daily since the commencement of my anatomical studies sixteen years ago, should entertain or promote any prejudice against the instrument. It is against the abuse, not the use, of it which I warn you. I beg of you not to employ it, or be induced by any one to do so until you have to a certain extent mastered the details of human anatomy. That is the grammar of our science – the modeller of our anatomical ideas. It is by the study of it that we acquire the habit of thinking as anatomists, and drawing as anatomists.”<sup>21</sup>

In 1852-53, Goodsir was called upon to edit eight volumes of the publication entitled “*On the Construction and Use of the Microscope*” which was later published in 1853 by Adolphe Hannover with Professor Goodsir writing in the Prefatory on 9 March 1853, “The supervision of the English edition of Dr Hannover’s Work on the Microscope was undertaken at his own request – and I have to regret that the little leisure at my command has delayed publication so long.”<sup>22</sup>

On 1 August 1859, Goodsir gave one of his last addresses to the graduates stating, “We are apt to look for the arrangements by which human life is conditioned and modified in the dissecting rooms and pathological theatre, and to forget that their most influential elements are beyond the reach of the knife and the penetration of the microscope.”<sup>23</sup>

A recent donation to the RCSEd collections that I would like to take note of is an exceptionally rare black and white photograph drawing of Professor John Goodsir mounted on a board. It was donated on 10 February 2020 by this author and given to him by this author’s last surviving cousin, on the Goodsir maternal side of the family, Mr. John Courtland Mackid. It had presumably been given to his great-grandfather, Dr. Harry Goodsir Mackid of Calgary, Alberta, Canada by a member of the Goodsir family (John Goodsir Portrait Drawing, Royal College of Surgeons of Edinburgh Reference: GD 200/28). Although its date cannot be determined, the Royal Scottish Academy has stated, “This is a photograph of an oil painting on canvass, the weave of which is discernible in the lower half, particularly at the lower left. It has a very naïve feel to it and is the work of someone who was versed in the rudiments of painting but would not be regarded as a professional artist.” In this black and



white photograph drawing of the esteemed Professor Goodsir for those with a discerning eye, there is a microscope in the background.

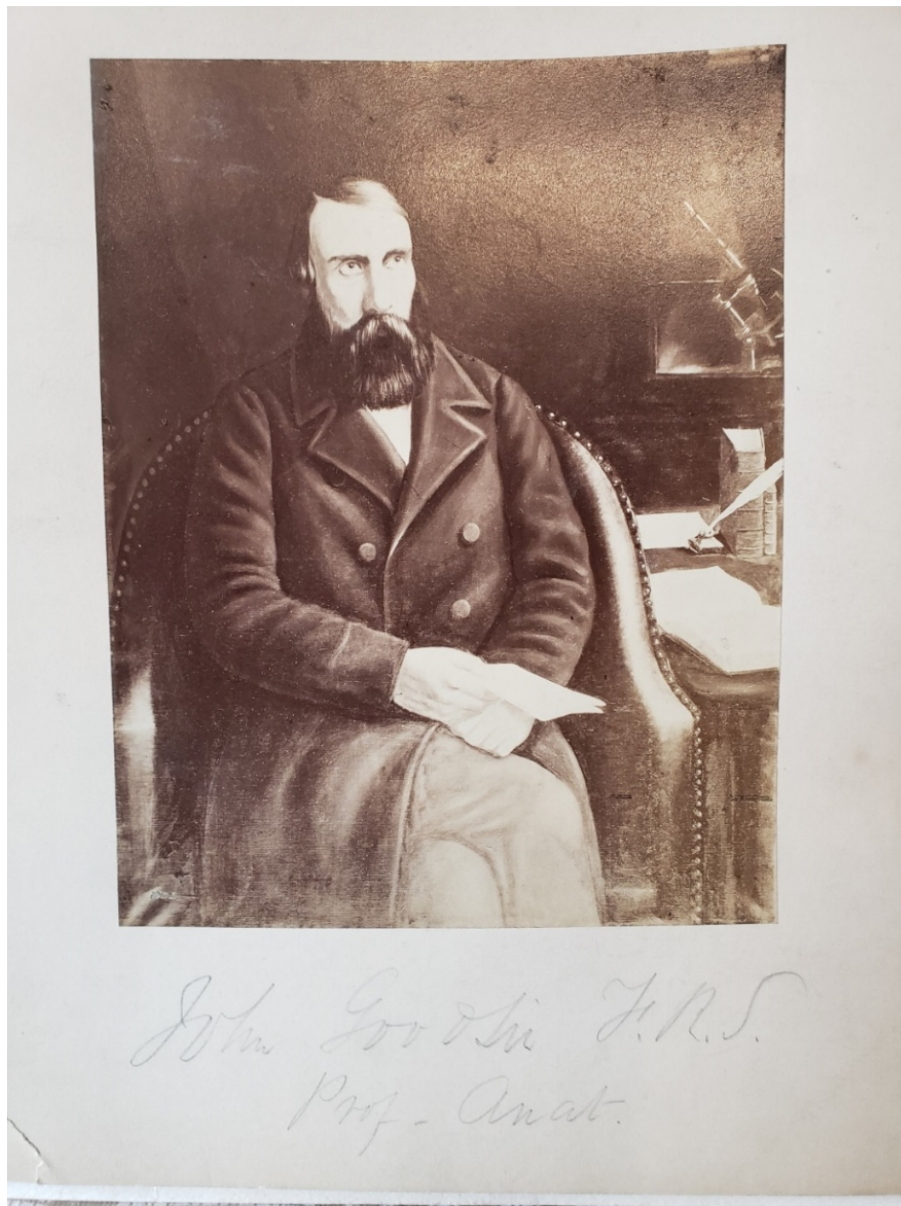


Fig.17. John Goodsir Portrait Drawing, date unknown, Photograph Courtesy of the Royal College of Surgeons of Edinburgh, Reference: GD 200/28

The microscope aided John Goodsir greatly throughout most of his entire life and he was instrumental in keeping up with the current technological developments and improvements with this instrument. I cannot emphasise enough the great importance the instrument had to my kinsman. It is my profound wish that someday one of his microscopes will indeed be found and restored to its rightful place in the Anatomical Museum of the University of

Edinburgh. Finally, I would like to gratefully acknowledge and record the ceaseless efforts of Mr. David Walker who assisted me with this work.

- 1 The Microscope. Accessed at: Science Museum.org.uk on 19 May 2023.
- 2 Letter to his father from John Goodsir giving him news of the Nasmyths, 9 November 1835, Royal College of Surgeons of Edinburgh Library and Archives, Reference: GD6/25.
- 3 Stevenson, Brian. "James Smith, 1800-1873," Microscopist.net. Accessed at microscopist.net/SmithJ.html on 19 May 2023.
- 4 Stevenson, Brian. "James Smith, 1800-1873," Microscopist.net. Accessed at microscopist.net/SmithJ.html on 19 May 2023.
- 5 Shepard, M. "The Beck microscope family," *Quekett Journal of Microscopy*, 39 (2003): 577-594.
- 6 Stevenson, Brian. "James Smith, 1800-1873," Microscopist.net. Accessed at microscopist.net/SmithJ.html on 19 May 2023.
- 7 Christian Gottfried Ehrenberg (1795-1876) was a German naturalist, zoologist, comparative anatomist, geologist, and microscopist, and is considered one of the most famous and productive scientists of his time. The images Ehrenberg made of microscopic organisms in the mid-1800s are both art and ground breaking science.
- 8 Turner, William (ed.) and Lonsdale, Henry (contrib.). *The Anatomical Memoirs Of John Goodsir F.R.S. Late Professor Of Anatomy In The University Of Edinburgh, Volume I* (Edinburgh: Adam and Charles Black, 1868), 45. In 1840, Goodsir spoke to the British Association for the Advancement of Science, on "Dentition in the ruminants," he was assisted by the Professor of Natural History, Robert Jameson, who lent him an Ehrenburg microscope. (Gardner, Dugald. "John Goodsir FRS (1814-1867): Pioneer of cytology and microbiology," *Journal of Medical Biography*, 2 (2017): 114-122.
- 9 *Carlisle Journal*, 26 June 1841, 3.
- 10 Lonsdale, Henry. "History of a Monstrosity Presenting Remarkable Peculiarities in the Arrangement of the Nervous System; with a Brief Inquiry into Its Teratological and Medico-Legal Relations," *Edinburgh Medical and Surgical Journal*, 60, 157 (October 1843), 330.
- 11 Christison, Robert. "Bright's Disease of the Kidneys," *Monthly Journal of Medical Science*, 3, 18 (1 June 1851): 558.
- 12 Goodsir "prevailed on the Town Council to set aside a small room in the College premises provided with a circular table around which thirty students could sit. The table was equipped with trolleys bearing a microscope" and the trolleys passed the microscope around the circular table enabling each student to observe the preparation on it. (Jacyna, L.S. "A Host of Experienced Microscopists:" The Establishment of Histology in Nineteenth-Century Edinburgh." *Bulletin of the History of Medicine*, vol 75 no. 2, 2001, 225-253. *Project MUSE*, doi: 10.1353/bhm.2001.0072).
- 13 Georges Oberhaeuser (1796-1868) was a German optician working in Paris in the early to middle nineteenth century whose contributions were part of the early development of the microscope as a scientific tool.
- 14 Turner, William (ed.) and Lonsdale, Henry (contrib.). *The Anatomical Memoirs Of John Goodsir F.R.S. Late Professor Of Anatomy In The University Of Edinburgh, Volume I* (Edinburgh: Adam and Charles Black, 1868): 88. It can be confirmed that Dr. Martin Barry and John Goodsir used a compound achromatic microscope which is noted in the *Edinburgh Medical and Surgical Journal, Volume Fifty-Eighth* (Edinburgh: Adam and Charles Black, 1842), 200).



- 15 John Charles Hall (1816-1876) was a physician in Sheffield and later Physician to the Sheffield Dispensary.
- 16 *Sheffield and Rotherham Independent Newspaper*, 14 October 1854, 9.
- 17 Cameron, Gordon Roy. *Pathology of the Cell* (Edinburgh: Oliver and Boyd, 1952), 140.
- 18 Email communication of Dr. Tacya Phillipson, Senior Curator of Science, Department of Science and Technology, National Museums Scotland to Michael T. Tracy, 19 January 2021.
- 19 This refers to Dr. Robert Robertson (1867-1930) who was an Edinburgh doctor and town councillor. (*The Scotsman Newspaper*, 19 May 1930, 7). The Reverend Joseph T. Goodsir in his diary entry of 8 July 1868 makes note of the long association with the Robertson family before he moved to his residence at 11 Danube Street writing, “Our lodgings at Mrs Robertson’s were made most comfortable. It is remarkable to see her and her son of all that has passed so respectably and comfortably.” (Diary of the Reverend Joseph Taylor Goodsir, 8 July 1868, Goodsir Papers, Gen 299, Centre for Research Collections, Edinburgh University Library). Additionally, Dr. Robert Robertson was the medical attendant to both Jane and Robert Goodsir during their final illnesses and signed their death certificates.
- 20 John Goodsir’s Notes on Anatomy, Winter Course 1859-60, Goodsir Papers, Gen 290, Box 1, Folder 3, Image Numbers: 4839-4840.
- 21 Turner, William (ed.) and Lonsdale, Henry (contrib.). *The Anatomical Memoirs Of John Goodsir F.R.S. Late Professor Of Anatomy In The University Of Edinburgh, Volume I* (Edinburgh: Adam and Charles Black, 1868): 367.
- 22 Hannover, Adolphe. *On the construction and use of the microscope* (Edinburgh: Sutherland and Knox, 1853): Prefatory.
- 23 Chiene, John. *Looking back, 1907-1860*. (Edinburgh: Darien Press, 1908), 6.

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