



Lydia Becker's 'school for science': a challenge to domesticity

Joan E. Parker

To cite this article: Joan E. Parker (2001) Lydia Becker's 'school for science': a challenge to domesticity, *Women's History Review*, 10:4, 629-650, DOI: [10.1080/09612020100200303](https://doi.org/10.1080/09612020100200303)

To link to this article: <https://doi.org/10.1080/09612020100200303>



Published online: 10 Sep 2007.



Submit your article to this journal [↗](#)



Article views: 1662



View related articles [↗](#)

Lydia Becker's 'School for Science': a challenge to domesticity

JOAN E. PARKER

Windermere, United Kingdom

ABSTRACT Lydia Becker (1827-1890) is known as a leader of the Women's Suffrage Movement but little is known about her work to include women and girls in science. Before her energy was channelled into politics, she aimed to have a scientific career. Mid-Victorian Britain was a period in which women's intellect and potential were widely debated, and in which the dominant ideology was that their primary role in life was that of wife and mother. Science was widely regarded as a 'masculine' subject which women were deliberately discouraged from studying. The author concentrates on the two main areas in which important contributions were made, the British Association for the Advancement of Science, and the Manchester School Board.

'It is better that maids, old and young, should graduate in the School for Science, rather than in the School for Scandal'.^[1] This extract is taken from Lydia Becker's essay, 'On the Study of Science by Women', and while it refers to the intellectually empty lives of middle-class women, it also indicates her overall objective, which was to end female exclusion in science. Published in 1869, it was written in support of a campaign which began at the British Association for the Advancement of Science and was then extended to include girls when she became a member of the Manchester School Board in 1870. At this time, she was involved in a wide range of issues, women's suffrage, married women's property rights and women's higher education.^[2] Her work here brought her into contact with leading women's rights campaigners including Elizabeth Wolstenholme, Emily Davies and Josephine Butler. Becker was motivated by a love of science and by her own educational deprivation. Her upbringing (despite considerable intellectual gifts and a natural inclination towards academic subjects) followed conventional lines and consisted of a rigorous training in domesticity. She was born into a middle-class family with an industrial background.^[3] Most of her life - with the exception of a brief period spent

in a boarding school in Liverpool and a holiday in Germany – was spent in seclusion in the country.

Becker experienced a lack of purpose and intellectual frustration. These were clearly expressed in a letter to a family friend on the occasion when a brother, Wilfred, was to go to Oxford to read science:

I rejoice in his success, yet I have the conviction that had the same opportunities been placed within my reach ... I could have done as much, and might now have occupied an assured position in the world, in a career honourable to myself, and useful to others, instead of being obscure, and helpless, with my intellectual powers crippled for want of knowledge of classics and mathematics and a mind half-starved for want of things I could have learned for myself.[4]

She found solace in study, gaining particular pleasure from botany and astronomy, 'feminine' subjects suitable for ladies as they did not require abstract thought or special guidance and could be fitted in with household duties. Her enthusiasm for botany was to be lifelong, and began when the family moved to the moorland area of Altham in 1850. From the little evidence available, the family appears to have been largely unsympathetic to her interests. She was left to develop her own skills and use her own initiative. There were no women friends to share her scientific interests, but two exemplars, the successful astronomers, Mary Somerville and Caroline Herschel, clearly served to encourage. One occasion when she experienced deliberate discouragement was when she sought advice from an uncle, John Leigh Becker, a keen botanist, on a collection of dried plant material. He gave a patronising response, one which demonstrated her invisibility as a potential scientist. After complimenting her on the 'excellent specimens and beautifully dried', she was reminded of the limitations of class and gender: 'I am glad that you have taken up Botany, it is a charming study for a young Lady ... and even your Papa has discovered that it adds much to the interests of a walk'.[5] In 1862, she won a gold medal in a national competition (held by the Kensington Society) for the finest collection of dried plants, a success which encouraged her to write *Botany for Novices*, a brief, simplified outline of plant classification, published privately in 1864. This publication clearly demonstrates an intention to establish her name in science and a wish to share scientific knowledge. *Star Gazing for Novices* was written about this time but remained unpublished.[6]

The British Association

Becker's enthusiasm for science was shared by a large section of the Victorian public. The growing interest in science and a new realisation of its importance were reflected in the foundation of a large number of scientific societies, including the British Association for the Advancement of Science,

which she joined in 1864. Attendance at the meeting of the BAAS had several advantages: it offered an intellectual outlet, provided a means of meeting other amateurs like herself and allowed her to share in the knowledge of the new scientific discoveries. Moreover, science was particularly attractive as it presented an alternative set of values to the Victorian concept of motherhood and cult of domesticity. Lydia Becker aspired to the development of her intellect and her reasoning powers for the pursuit of scientific truth: 'By truth I do not mean any mysterious abstraction, but true assertions respecting matters of fact'.[7] Its mental values included the cultivation of the powers of observation, the development of accuracy, the amassing of knowledge and the verification of evidence. The study of science was particularly valuable to many middle-class women who led a 'monotonous and colourless' existence, one which could result in apathy and 'intellectual vacuity' [8]; science had a therapeutic power. Underpinning this approach was the belief that the study of science was a basic human right and men and women were intellectually equal. Science was therefore to be studied on the same terms as men, and women were to proceed through the same training and enter for equivalent qualifications.[9]

Unlike most other scientific societies, the BAAS admitted women. The first presidential address (given in 1831) declared, 'A public testimonial of reputable character and zeal for science is the only passport into our camp which we would require'.[10] It aimed to encourage amateurs, to disseminate scientific ideas and was intended as an important link between scientists and the general public. A national, peripatetic organisation, it held week-long meetings at different locations each year. Because of its liberal policy in admitting women and the many social events which took place, the soirées, excursions, conversaciones and various fringe meetings, a substantial number of female relatives and friends began to attend the lectures. The *English Women's Review* estimated 1100 women visitors attending in 1838 at Newcastle.[11]

By 1848, women were admitted as members. Their presence, however, was controversial and met with opposition from the first. When the possibility arose that Somerville [12] would attend the Oxford meeting in 1832, the President Elect, Reverend William Buckland, voiced the feelings of those members who objected to women being there in a serious capacity:

Everybody whom I spoke to on the subject agreed that if the meeting is to be of scientific utility, ladies ought not to attend the reading of the papers - especially in a place like Oxford - as it would at once turn the thing into a sort of Albemarle - Dilettante meeting.[13]

Their main function was that of providing a pleasurable dimension, raising the social tone and generating good manners; they were a kind of 'social cement'. [14] A gender barrier was created through the system of ladies'

tickets, introduced in 1843. Priced at £1, they added considerably to the Association's finances. A microcosm of a patriarchal society, with an all male-government, gendered language and a traditionalist outlook, the British Association had a forbidding environment which discouraged female aspirations. Becker's own experiences showed that although possessing the necessary zeal and considerable talent, she was, in practice, given little recognition and encouragement.

The importance which she attached to the meetings is seen in her unbroken attendance between 1864 and 1889 (this included a visit to Montreal in 1884) and in spite of financial difficulties in the early years.[15] They were mentally regenerative: 'the contact with so much of the intellectual strength of the nation brightens one's intellect and invigorates one's powers'.[16] Fresh knowledge was not only absorbed at the lectures but was gleaned too in a pleasurable, genteel manner. At Norwich (1868), she was a member of a geological expedition visiting Cromer. Afterwards they were conveyed to Colne House, where they enjoyed a luncheon given by their hostess, Lady Buxton. On the return journey to Norwich, further entertainment was provided by viewing a collection of South American and Australian parrots at Northreppshall. The BAAS not only helped to satisfy to a limited extent a hunger for scientific knowledge, it also provided those middle-class women of limited means with a social life and an occasion to travel.

A tangible effect of the Association on Becker is evident in her creation of the Manchester Ladies' Literary Society. In 1865, the Beckers moved to Manchester. She was unmarried, nearly forty years old, and had no significant role in life. Becker saw the move as one that could provide an opportunity for her ambitions, but she discovered that the city had little to offer a female amateur scientist. It had a large number of male scientific societies, including the oldest provincial society, the Manchester Literary and Philosophical Society, from which women were excluded, and could boast the Royal Manchester Institute, which was built in 1856 to provide facilities for public lectures in the arts and sciences. Undoubtedly, in planning such a highly optimistic venture as the Ladies' Society, she was encouraged by the number of women who were attending the BAAS. While clearly reflecting the Victorian values of cooperation and self-help, in structure and aim, the Society was modelled on the Association. It had a President (Becker) and a Secretary, and the members paid an annual subscription of half a guinea. Like the BAAS, the lectures mostly ended in debate (a practice that was not common to most scientific societies). The women were asked to submit papers on any subject other than religion and were promised access to scientific books.[17] This overcame the obstacle that faced many women who found access to scientific books difficult.

Becker gave the opening presidential address of the Winter Session on 30 January 1867 at the Royal Manchester Institute, Mosley Street. Characteristically uncompromising and challenging, it pointed to the need for women to cooperate and for some common meeting place for those women interested in intellectual pursuits. The address drew attention to their exclusion from scientific societies: 'these institutions have a deficiency... they draw an arbitrary line among scientific students and say to one half of the human race - you shall not enter into the advantages we have to offer'.^[18] It was a radical innovation, the first of its kind in Manchester and singularly ambitious for a spinster, for it questioned current assumptions and escaped from the dominant idea that women's education was for motherhood. Supposedly literary, the programme was mainly scientific. The first paper was contributed by Charles Darwin (with whom she corresponded on naturalist questions) on the Habits of Climbing Plants. Given the ladies' educational disadvantages, together with the prevalent belief that science was for men, advertising science for ladies would almost certainly have been counterproductive. During the first two sessions, the women attended lectures in botany, astronomy and geography, largely contributed by Becker. It is impossible to determine the number of women attending; a vague reference was made at the first meeting to a 'goodly number' ^[19], a statement undoubtedly meant to encourage others. Its existence for at least three years suggests that it supplied a need, and it also helped to arouse interest concerning the education of women. Helen Blackburn, writing in the final *Women's Suffrage Journal*, blamed low membership numbers ^[20], but in addition to this Becker had become fully committed to the Manchester National Society, and at some point in late 1868 reluctantly withdrew from the Ladies' Society.^[21] It then appears to have been reconstituted, coming under male patronage. The women were then offered a choice of two programmes, a History of England 1815-1841, or a History of Science.

The Ladies' Society provided her with the opportunity to lecture at the BAAS. A paper, which she had read to the ladies in early 1868, on 'The Supposed Mental Differences Between the Sexes' had aroused the interest of the Manchester Anthropological Society. It also caught the attention of a BAAS official, Dr H Grierson, who saw its potential for debate in Section 'F' (Economics and Statistics). Very few women had their papers presented - these were restricted to 'feminine' subjects, as in the case of Miss Muir Mackenzie's 'Description of a Journey Undertaken in the Southern Slavonic Countries of Austria and Turkey in Europe' (1864), which was not of any real scientific interest. Attention usually focused on the prestigious Section 'A', on the mathematical and physical sciences. Women were regarded as amateurs, and mainly consigned to Section 'F'; out of the five lectures given by Becker, four were given here.^[22] The exception, 'On the Alteration in the

Structure of *Lychnis Diurna* (Red Campion) Observed in Connection with a Parasitic Fungus', was given in the Zoology and Botany section in 1869.[23] Ironically, it was Section 'F' which attracted most attention because of public interest in novelties and in women speaking. She always spoke to a full audience. At Belfast (1874), before reading 'Some Practical Difficulties in the Working of the Elementary Education Act', the scene was described by the *Manchester Guardian* as one of eager anticipation. It also commented on the solid support given by women:

Long before the hour of opening all the seats were occupied ... the number of ladies present being very large ... Miss Becker was listened to with great attention and was frequently loudly applauded ... On the other hand the mechanical section ... closed at 2 o'clock from sheer inattention.[24]

Her first paper, given in Norwich Museum on 25 August 1868, drew an exceptionally large crowd both because of its subject matter and her reputation. As a political activist in Manchester, she had achieved some notoriety as a rebel against traditional values.[25] 'Some Supposed Differences in the Minds of Men and Women in Regard to Educational Necessities' was not only a departure from the BAAS's accepted 'feminine' tradition, but also in the stance it took. It offered a feminist contribution to the current debate on women's intellect and the direction that their education should take. Science was used to justify women's inferior position and to block their progress into higher education. Their supposed mental and physical inferiority, and the risks to their health which would result from increased intellectuality, formed the basis of their argument. Male scientists, who possessed the knowledge, education, and the professional authority, were in a particularly strong position in arguing that women should follow their traditional role as a homemaker. They sustained the belief that it was 'the necessary continuation of an evolutionary trend observable in lower and higher animals'.[26] The paper's main thrust was political. It aimed to refute the assumption of women's mental inferiority and in so doing remove the main obstacle to obtaining the suffrage. It also demanded their right to a scientific education. A practical motive was also evident - the hope that it would lead to an extra income: 'I hope to make it pay, *indirectly* if not directly'.[27]

Becker had already spoken in public and the previous year had taken part in a BAAS debate. This occasion had convinced her that women would be accepted if they were calm and self-possessed. If they were to 'do what they feel they can do and make no fuss - they may do so with approval but self-consciousness and artificial timidity stand in the way'.[28] Confident, too, of her own intellectual abilities, and with an intense conviction based on her own personal observations [29], the paper was uncompromising and offered no half-measures; its strength lay in its boldness and cogent

argument. Beginning with an exposition of women's exclusion from the public sphere it moved to the main argument:

the attribute of sex did not extend to mind ... that any broad marks of distinction which may be observed to exist between the minds of men collectively were traceable to the influence of the different circumstances under which they passed their lives ... That in spite of the external differences which tended to cause divergence in the tone of mind, habits of thought and opinions of men and women, it was a matter of fact that these did not differ more among persons of opposite sexes than they did among persons of the same sex.[30]

The propositions were illustrated by examples from the plant and animal kingdom. The paper concluded that the intellectual faculties of the sexes were the same, and demanded equal opportunities for a liberal education and the study of science.

At the end of a lively debate, the need for women to study science was recognised when it was agreed (with only one dissentient) that the BAAS Council be approached to appoint a committee to consider how this could be promoted.[31] The paper was clearly effective, both in causing comment and in establishing her as an able lecturer who was capable of creative thought. Delighted by the success of her paper, she found herself temporarily exalted into the role of a 'distinguished visitor ... much sought after at Norwich' [32] and made the acquaintance of several leading scientists, including James Simpson and Alfred Wallace. Further opportunities were given to advocate women's right to study science when she received invitations to lecture at the Hull Literary Institute and at the Nottingham Philosophical Society during the coming winter. The material used in the lectures was published in 'On the Study of Science'.

The choice of subject matter aroused resentment, as it was seen as a male prerogative. Hostility and ridicule surfaced during the debate. The traditionalist view that a woman's place was in the home was articulated by Dr Samuel Brown, President of the Section:

Woman's mission in life was different to that of men, the former having reserved for them a higher mission, in which the delicacy, refinement and grace, which formed the charm of the female mind, were more important than the pursuit of science - viz, the training of a family.[33]

The Reverend A. Jessop caused laughter with the statement that he 'did not see the force of the illustration drawn from Bee-land - we were not bees, but men and women'.[34] 'Some Supposed Differences' received wide coverage in the press, which largely derided her contributions. Normally stoical to hostile personal comments, Becker admitted a 'horror of newspapers lately' [35], showing an unusual sensitivity, a reaction which points to the high value she attached to herself as a serious student of science. Here it is

difficult to distinguish between the enmity caused by the attack on male political monopoly and that caused by a woman making a successful scientific contribution. However, the *Lancet* – which devoted several columns to the lecture – provides an insight into the alarm felt by many male scientists. It aimed to undermine her achievement. The lecture was first dismissed as a ‘pretty performance’ [36], while the subject matter was too serious for amateurs, i.e. women. The conventional arguments against women’s advance into higher education were then produced. Woman’s reasoning powers were deductive, her special gifts were those of wife and mother. It presented a stereotypical image of scientific woman, unfeminine and unattractive, one calculated to discourage other women with similar ambitions. A grudging recognition was given that although there were a few women capable of scientific thinking, these were masculine and deviant: ‘the logical, philosophical, scientific woman is not the ordinary type; she frequently – we say it with all delicacy and yet truthfully – departs from it in her physical as well as in her mental characteristics’.[37]

The *Lancet*’s unease was still evident the following year, when it linked her paper with the nineteenth century’s most outstanding rebuttal of female inferiority, J.S. Mill’s *Subjection of Women* (published 1869): ‘We see no reason for substantially modifying the views we expressed in an article on the occasion of Miss Becker’s paper being read at Norwich. We have no desire to curtail women’s sphere of influence’.[38] In the same edition, the editor advised ladies to think twice before studying medicine.[39]

Becker displayed her customary tenacity by giving four more lectures, but none had the same impact as the first. With the exception of ‘*Lychnis Diurna*’, they aimed to raise public awareness of the Manchester School Board’s discriminatory policy towards girls. ‘*On Some Maxims of Political Economy as Applied to the Employment of Women and the Education of Girls*’ (Edinburgh, 1871) was followed by ‘*On the Attendance and Education of Girls in the Elementary Schools of Manchester*’ (Birmingham, 1872). ‘*On Some Practical Difficulties in the Working of the Elementary Education Act*’ was given at Belfast in 1874 and repeated the same year at the National Association for the Promotion of Social Science. Her advocacy was then mainly limited to participation in debates. She was involved in attempts to end the male-dominated government of the British Association [40], and worked on the Committee on the Manner in which Rudimentary Science should be taught, and how Examinations should be held therein, in Elementary Schools. Set up in 1879, the Committee aimed to influence both public and Government to improve and extend the teaching of science. Typically, the girls were not considered until, during an open discussion, Becker proposed herself for adoption to the Committee as representing their interests and was accepted.[41] She was a member from 1880 to 1889, and although always in a minority, at least there was a slight acknowledgement

that the girls' needs were now being recognised. For Becker herself, there was value in making new contacts, for example, the eminent chemist Sir Henry Roscoe, who also supported girls' higher education.

The BAAS remained blinkered to women's needs and potential, its policy to discourage women clearly seen in the publication of misleading statistics on attendance. The number of women present at Newcastle in 1889 was given as 579, implying that few women were interested in science. Becker corrected this by pointing out in the *Journal* that these were only the holders of ladies' tickets and excluded the women members and associates. In reality 1038 women had been present.[42] In 1869, she had commented on the absence of women at the meetings: they were 'attended with a sort of ghost ... for if women had had the same advantages held out to them, there would now have been an eminent woman for every eminent man'.[43] Reviewing the situation twenty years later, she concluded that the BAAS was following a policy of 'systematic discouragement of scientific study by women'.[44] The Association had, however, given her talents recognition, and she had been able to exploit this to a limited extent for her own personal gain and to disseminate her own ideas. When Manchester hosted the annual meeting in 1887, she received a slight acknowledgement for her contributions in science when she was appointed to the BAAS local Government Committee.

The Manchester School Board, 1870-90

The Education Act (1870) created the School Boards, local bodies which were elected to supply education. The Act gave women and other politically underprivileged groups the right to vote for and become members of the new boards. Becker eagerly seized the opportunity to stand for election, not only from the educational standpoint but also for political and social gain. It was an important step towards the vote as women could now prove themselves as dedicated and efficient public servants and they would be given public status and influence.

There were two main strands in her electoral address, a belief in universal secular education [45] and a dedication to the interests of working-class girls. In the movement towards national education, she perceived the gap between boys and girls to be a steadily widening one which needed urgent redress, demanding 'for my own sex an equal share in these advantages in order to attain that end after which we are all striving - namely that the whole people shall be educated'.[46] The traditional view, which Becker fought tirelessly against, was that girls should receive an education inferior to that of boys. The assumption was that it should equip them to be servants, wives and mothers, and therefore their curriculum was to be domestic and not academic.

Becker came ninth out of fifteen successful candidates, polling over 15,000 votes.[47] She occupied a tenuous position on the first Board; she was an Independent and known as a woman whose progressive views posed a threat to the traditionalists. She saw herself as faced with a prejudice 'so deeply ingrained as almost to reduce to despair those whose own intellects and whose instincts taught them to claim essential and intellectual equality for all human beings'.[48] Broadly speaking, the Board divided into two main groups, the Liberal Unsectarians, always in a minority, and the Sectarians, who consisted of a large, compact group of Anglican Tories and Catholics. Herbert Birley, who was the chairman from 1870 to 1885 and from 1888 to 1890, was an influential Manchester figure, respected for his philanthropic work. In spite of his Anglican interests, he upheld the Board's work against that of the narrower church concerns. However, towards the girls he showed a hard traditionalist stance; education was 'to teach them their duties, to cultivate their intellects, make them more docile, more obedient and more tractable'.[49] Birley's resistance to any suggestion that aimed to move girls away from a curriculum of domesticity was to prove a serious setback.

Against these disadvantages, Becker possessed several assets. As the Secretary of the Manchester National Society for Women's Suffrage, she had a strong power-base, had developed several skills, including public speaking, and was used to working relationships with men. She was closely linked with the Manchester Radical Liberals, including Jacob Bright and his wife Ursula. Most importantly, as the representative of the women householders, she was an electoral asset; by the second triennial election, she was accepted on the Liberal Unsectarian team. She was able to build up a small group of male supporters who sympathised with the girls' aspirations. The alliances cut across party lines, were mainly suffragist, and maintained throughout successive boards. Dr J. Watts, J.A. Bremner, E. Broadfield, T. Dale and T. Hughes assisted in keeping the girls' interests in view. The cooperation between them varied in accordance with the issues involved and with local politics, but while some support was forthcoming on most issues, the question of science for girls was met with indifference.

The slow progress of girls into science has to be viewed against a background of general educational deprivation and the policy of continual devaluation followed by the majority of the Sectarians.[50] Becker's intention was to heighten public awareness of the sectarian policy and through this to bring about change. With this in view, she drew attention to the discrepancies between boys and girls in 'On the Attendance and Education of Girls in Manchester', which pointed out that as regards a basic need, i.e. accommodation, there was 'an actual excess of 2,399 for boys over the total number of boys in Manchester and a deficiency of 2,379 in the accommodation of girls'.[51] She worked energetically with the Liberal

Unsectarians to repair these deficiencies and in other areas where much groundwork needed to be done. While she was reliant on them to support the girls, the female vote could be crucial for the Unsectarians. This was especially the case during the election campaign of 1882, when there was the threat of increasing clerical opposition which aimed to undo the Board's work. Speaking on the electoral platform, she claimed 'for herself and her friends the votes of the women electors on the grounds that they had attended to the interests of female education'. In contrast, the Voluntary Schools gave 'poor justice' to the girls.[52] Carol Dyhouse has pointed out that the 'evangelical movement played an important role in helping to define the feminine mission as one of service'.[53]

Given the largely traditionalist composition of the Board and its preoccupation with Sectarian issues, the question of science for girls rarely became a matter for serious debate. Becker was quick to exploit what was to be her major opportunity. This occurred when, as a member of the newly appointed Scheme of Education Committee, she was able to make her own recommendations on the organisation, curriculum and provision of schools. She proposed the progressive concept of large, mixed schools and senior schools of five hundred and upwards.[54] As science was expensive to teach, large schools would be more economical, and the girls would have the opportunity to use scientific equipment. The lack of trained science teachers was to be solved with a scheme which would allow board school teachers to attend science classes at Owens College. In addition to the subjects approved by the Education Department [55], she suggested that mixed and senior schools should teach history, geography, algebra and geometry; and senior classes 'such elementary physical and scientific subjects as can conveniently be added'.[56]

The ideological gap was clearly evident in the vote when her proposals were defeated by 10-2. Birley and Canon Lawrence Toole, the leading Catholic member (1870-90), opposed all her proposals. Toole's objection to mixed schools was on moral grounds. The conventional practice of educating boys and girls separately was to be responsible for delaying the progress of girls into science. Toole reinforced his primary objection by introducing an additional factor, overpressure; the extra subjects would 'overstrain their minds, to their physical and mental injury'.[57] Becker used the *Journal*, the *English Women's Review*, and the BAAS to bypass the Board and expose its policy of discrimination towards the girls. 'On the Attendance and Education of Girls in Manchester' included a table of statistics [58] which showed that while a small number of boys were studying science and had a greater variety of subjects, the girls lost heavily as much of their curriculum was given to needlework.

Becker was faced with the additional problem of opposition from many parents who were opposed to the idea of mixed classes. She made direct

approaches to them, again avoiding the Board. Speaking to them from the electoral platform and at prizegivings, she attempted to allay their fears on the supposed impropriety of a mixed education by adopting a practical approach. ‘She did not see why it was more likely that young men and young women should misbehave when they were studying in the science classes than when they were together with their families’.[59]

Subject of lesson	Number of children in each subject receiving instruction therein			
	Boys	Girls	Infants	Total
Geography	4295	2,083	-	6378
History	1979	739	88	2806
Grammar	3517	1710	-	5227
Needlework	-	8160	1074	9234
Object Lessons	159	120	1070	1349
Singing By Note	767	180	269	1216
Drawing	1260	218	-	1478
Bookkeeping	92	20	-	112
Composition	16	5	-	21
Geometry	72	-	-	72
Algebra	270	-	-	270
Euclid	124	-	-	124
Natural Philosophy	70	-	-	70-
Animal Physiology	265	140	-	405
Political and Social	210	-	-	210
Economy				
French	10	-	-	10

Table I. Statistics compiled by L. Becker, showing the disparity in boys’ and girls’ education.

One of the major contributions made by women members on the School Boards was in the liberalisation of the curriculum; they ‘moved the syllabus away from the three R’s, needlework for the girls and drill for the boys’.[60] In this Becker played her part, working determinedly against the teaching of needlework, domestic economy and religious instruction, regarding them as non-academic subjects, which were occupying the place of science. Needlework was ‘a branch of industry and not of learning’ [61]; it implied femininity and thrift.[62] Moreover, it was being replaced by the sewing machine. Girls’ exemption from needlework in elementary schools and its replacement with physiology and the laws of health was demanded in ‘On the Attendance and Education ...’. In reply, the *School Government Chronicle* countered the demand by raising an issue which was causing great current concern – the high rate of infant mortality. It argued that most infant deaths were due to ‘ignorance of physical laws on the part of

mothers', therefore girls should be taught needlework, cookery and physiology.[63]

Becker lent her support to a protest made by several women on the London School Board in 1877 against the Department's new Needlework Code. They levelled their criticism at the Code's unrealistic demands, which called for intricate and detailed work bearing little relationship to the needs of a working-class home. Becker added her condemnation, acidly describing it as 'a specimen of masculine legislation in women's sphere ... framed by one who was a fanatic in respect of needlework'.[64] The protesters (led by Elizabeth Surr and Helen Taylor) [65] suggested an alternative scheme devised by elementary school mistresses. On Becker's initiative, the Manchester School Board requested clarification of the scheme from the Education Department. The failure of the protests added weight to her unshakeable conviction of the necessity of 'a full representation of the opinions and interests of women ... in the House of Commons'.[66]

The overloading of the curriculum with needlework was especially apparent in the case of half-timers - the majority were girls. They worked half-time in the mills and were also used for domestic labour. Already exhausted with work, the girls were faced with an afternoon timetable of needlework. Becker attempted a partial solution by proposing a double half-time system, based on a school in Copenhagen where the morning timetable was repeated in the afternoon. This would reduce the amount of needlework and allow room for science. Her proposal was rejected by the Board as too costly.[67] The practice of teaching needlework in schools grew in spite of protests and at the expense of academic subjects. In 1888, the BAAS Committee on the Teaching of Science pointed to an actual decline in the amount of science in the curriculum: 'needlework in schools is gradually excluding geography'.[68]

Both needlework and domestic science implied that girls were going into low-paid jobs and the domestic sphere.[69] They were being trained at school to serve the interests of the middle classes. Becker always fought against this conventional thinking. At a Domestic Economy Congress [70] held in Manchester in 1878, she drew attention to the reality of the girls' situation. They were 'persons bound to domestic servitude'.[71] The opportunity was seized to challenge the policy of domesticity when, in recognition of her dedicated work for the Board, she laid the foundation stone of a new girls' and infants' school at Burgess Street. The school's curriculum was wholly domestic. The girls' future duties as housewives and mothers were reinforced by speeches from several of the Board's clerics. Becker's reply opposed their traditionalist outlook, humorously commenting that it was 'a great mistake to suppose that domestic duties were limited to girls and women ... every boy in Manchester should be taught to darn his own socks and cook his own chops'.[72] The situation, however, became

worse when the Education Department made domestic economy compulsory for girls in 1878.

The questions of religious instruction and its replacement by science on the curriculum raised sensitive issues. Moreover, her active opposition proved largely counterproductive. On the question of her own beliefs she was deliberately reticent but known to have a strong dislike for the religious arguments which occupied the Board's valuable time. Apart from vague references to her as a churchwoman, there is a significant lack of information on the question of her religious faith. The available evidence suggests she was a freethinker, but to admit this would have done irreparable damage to her position. When questioned by a close and valued friend, Mary Johnson, who was Secretary of the Birmingham National Society, her reluctant reply provides an insight into her beliefs.

I wonder why you should have troubled about my being a supposed 'rationalist'? I have not the faintest notion what the word conveys to other people. I do not assent to any proposition which is either not learned by direct consciousness and capable of logical proof. I would not drag away any support from anyone where faith is a real thing.[73]

The Board's new Religious Instruction Scheme was introduced in 1874 and was opposed by only two members, Lydia Becker and John Watts.[74] Their rejection was on the grounds that the scheme was compulsory, it violated conscience, and it confirmed false doctrines. Becker had already unintentionally drawn attention to her dislike of religious teaching the previous year. This occurred during a private visit to a school with the chairman of the School Management Committee when she made a tactless request for the removal of scriptural mottoes from the walls; she saw these as reinforcing religious doctrines, and believed that they would have the effect of frightening the children. At the following Board meeting, a confrontation took place with the clerics, led by Alderman Lamb. During the heated exchanges which took place, she refused to retract her opinions and in an exasperated outburst referred to the 'bloody bones' meaning behind the mottoes. This blunder placed her in a humiliating position, lectured to by the clerics. Toole addressed her through the Board: 'If she is to claim any further courtesy she must have some consideration for those who have some respect for religion, if she has none herself'.[75] The incident was then exploited by Lamb in the local press, the result evident in the second triennial election when she came next to the bottom of the poll.

A positive result was, however, obtained. A subject which had previously been regarded as taboo was now a part of the debate on the curriculum, its position and utility questioned. In this instance, breaking new ground proved a painful experience.

Three new developments (fully supported by Becker) led to girls entering science, evening schools, higher grade schools and the

Scholarships and Exhibitions Scheme. The construction of this educational ladder was largely the work of the Liberal Unsectarians. Becker and Bremner proposed evening schools in April 1874; these were regarded as a partial solution for half-timers. Both in the higher grade schools and evening schools, girls' access to science was restricted; moreover, they had a reduced choice of subjects compared with boys.

The Scholarships Scheme was established in 1875. Its striking feature was that it was tenable for boys and girls – in Bremner's phrase, 'the claims of girls to higher education were now recognised'.^[76] Sexual discrimination could not be practised in the examination procedure as candidates were to be known by number only. Lydia Becker's influence is clearly seen in the establishment of several exhibitions. Thomas Dale ^[77] offered the Hatherlow Scholarship for girls only in 1876. The Becker Exhibition was given in 1879 by Robert Leake and a third by Dr Samuelson in 1880. The girls did not win scholarships until 1878 – seen as proof of the disadvantages they suffered. Their first achievements were not only scholastic successes, they were also a psychological breakthrough, serving to encourage. Further evidence of their mental ability was provided when in 1881 two girls gained first class honours in Practical Chemistry in the science examinations in the Central Higher Grade Schools.

Making the girls visible was one of Becker's prime concerns. Traditionally, any academic achievements of women and girls had been hidden from view. In 'On the Study of Science', she resurrected the achievements of several women who had not been honoured and pointed out that the exclusion of girls from the lists of academic awards implied that they were being rewarded with what was in effect an 'invidious distinction'.^[78] Now for the first time they were being recognised – and by a respected member of the Board, who drew attention to their success at Board meetings and on the electoral platform. Raising their self-esteem and encouraging them to compete for academic distinction was an important part of the process of change.

Conclusion

In aiming for a 'School for Science' rather than a training in domesticity, Becker had set herself a particularly difficult task. The depth and tenacity of this conventional thinking ^[79] is illustrated in the Newsom Report (1963): for girls the 'most important vocational concern ... Marriage ... many girls are ready to respond to the wider aspects of home making and family life'.^[80] The movement to encourage women to enter science has gained momentum only recently. In attempting to evaluate the contributions made, it must be borne in mind that at this early pioneering stage, a formative period in women's history, there could be few tangible gains.^[81] Lydia Becker was

opposing a powerful ideology that provided girls with an image of servility, subjecting them to social restraints which hampered them from competing in an academic world. She was acutely aware of the stifling effects which resulted from the Church's teaching and the class and gendered policy of the state. The entrenched opposition of the Manchester Board and the inflexible masculinist values of the BAAS showed that a change was needed in public opinion. It was largely in challenging accepted traditional values and working to create a fresh climate that her achievements lay.

Becker's powerful personality, too, must have made a substantial impression on the public. As the first female figure of significance in Manchester, her importance as a role model can neither be quantified nor overestimated. Her own life showed remarkable progress. From an insignificant beginning as a dependant spinster, she advanced to a life of independence and purpose, offering a challenge to the traditional feminine role which was dependent on men.

Both on the Board and at the BAAS she displayed both the courage and tenacity which were essential in order to maintain her position. As a public speaker, she used her authority as a member of the School Board to present the alternative of a 'School for Science' instead of domesticity.

Undoubtedly a successful woman on the Board, Becker was seen by many to be second only in importance to Birley. On her death the Liberal Unsectarians honoured her memory by choosing Rachel Scott, the wife of C.P. Scott, the Liberal Editor of the *Manchester Guardian*, to take her place.[82] The Board however, remained intractable, excluding her from the new Technical Sub-committee in 1890 and placing her on the Girls' Manual Sub-committee, one which focused on a domestic curriculum for girls.

The significant changes which Lydia Becker helped to bring about became evident in the year of her death. Margaret Lea, who had been a Board School pupil, had won a scholarship to Manchester Girls' High School, proceeded to Girton College and gained the position of twenty-seventh Wrangler in the Mathematical Tripos.[83]

Notes

- [1] Lydia E. Becker (1869) On the Study of Science by Women, *The Contemporary Review*, 10, p. 396 (London).
- [2] See J.E. Parker (1990) *Lydia Becker and her Work for Women*, unpublished PhD thesis, University of Manchester. A recent, sympathetic study of her life and work is given by Audrey Kelly (1992) *Lydia Becker and the Cause* (Lancaster: Centre for North West Regional Studies, University of Lancaster).
- [3] Becker was born in 1827, at Foxdenton Hall, Oldham, the eldest of fifteen children. The family owned bleaching and dyeing works at Altham and

- Middleton. Her German father, Hannibal Leigh, was married to Mary Duncuft, the daughter of a Lancashire mill owner.
- [4] L. Becker to Mr Acworth, Letter Book, 1868, p. 404 (n.d.), Women's Suffrage Collection, Manchester Central Library Archives (hereafter WSC, MCLA). This contains letters sent in 1868 as secretary of the Manchester National Society for Women's Suffrage (hereafter MNS).
- [5] J.L. Becker to L. Becker, 15 October 1853. Correspondence of Lydia Becker and the Becker family, Fawcett Library, London Guildhall University.
- [6] MSS Fawcett Library.
- [7] L. Becker, quoted in Helen Blackburn (1902) *A Record of the Women's Suffrage Movement in the British Isles with Biographical Sketches of Miss Becker*, p. 35 (London and Oxford: Williams and Norgate).
- [8] L. Becker, 'On the Study of Science', p. 404.
- [9] She thus opposed the traditionalist view held by several men and women in the movement for women's higher education who were willing to have special women's examinations and lower standards.
- [10] Given by Reverend Vernon Harcourt, quoted in *The British Association for the Advancement of Science: Victorian Science: a Self-Portrait from the Presidential Addresses of the B.A.*, ed. G. Basalla, W. Coleman & R.H. Kargon (London: Anchor Books, 1970), p. 39. For a comprehensive background on the Association, see R. Macleod & P. Collins (Eds) (1981) *The Parliament of Science 1831-1981* (Northwood: Science Reviews Ltd.)
- [11] Women and the B.A., *The English Women's Review* (hereafter *ER*), July 1898, Article 5, p. 65. This article emphasises the prejudice against women. In 1836, they were not allowed to attend the sections, but because of the influence of Mary Carpenter and her supporters they were accepted as visitors from 1838.
- [12] Somerville's outstanding contribution to astronomy, *The Mechanism of the Heavens*, had been published the previous year.
- [13] William Buckland to Rodrick Murchison, quoted in O.J.R. Howarth (1922) *The B.A.A.S., a Retrospective Study*, p. 56 (London: British Association). In the event, Somerville did not attend.
- [14] J. Morrell & A. Thackray (1981) *Gentlemen of Science, Early Years of the B.A.A.S.*, p. 149 (Oxford, Clarendon Press). Although this is restricted to the early years, it has a very helpful analysis of the part played by women.
- [15] In late 1867, Lydia had taken the singular step of leaving the family home and moving into lodgings as her family was hostile to women's suffrage. She had become secretary of the MNS in February, and received an annual salary of £40, which enabled her to live at subsistence level until her income was supplemented by freelance journalism.
- [16] L. Becker to Sarah Jackson, 14 August 1868, Letter Book, MCLA.
- [17] Blackburn, *A Record of the Women's Suffrage Movement in the British Isles with Biographical Sketches of Miss Becker*, *History of the Women's*

Suffrage. p. 38. In her address, Becker stated that she had access to the library of an early naturalist's association, the Ray Society. This suggests that she may have been a member but unfortunately, the early membership records are lost.

- [18] *Ibid.*, p. 35.
- [19] *Ibid.*, p. 38.
- [20] H. Blackburn (Ed.) (August 1890) *Women's Suffrage Journal Memorial Number*. The journal (hereafter *WSJ*) was Becker's most successful innovation: she was founder, editor and proprietor from March 1870 until her final illness in 1890.
- [21] I have been unable to trace the Society's activities beyond 1869. There is as yet no evidence available which would indicate whether it became linked or absorbed by any other educational movement in the North of England.
- [22] The acceptance of papers on women's issues relied on male sympathisers as officials of the sections. For example, the educationalist, Joshua Fitch, was a secretary of Section 'F' in 1871 and 1872 when Becker read her papers, and James Heywood (a leading suffragist) was its president in 1875 when Anna Priestman's paper on women's suffrage was read.
- [23] The text is given in the *B.A.A.S. Annual Report* of 1869, p. 106.
- [24] *Manchester Guardian*, 25 August 1874, p. 8.
- [25] See J.E. Parker (1991) Lydia Becker: pioneer orator of the women's movement, *Manchester Region History Review*, 5, pp. 13-20.
- [26] Susan S. Mosedale (1978) Science Corrupted: Victorian biologists consider 'The Woman Question', *Journal of the History of Biology*, 2, p. 5.
- [27] L. Becker to S. Jackson, 14 August 1868, Letter Book, MCLA.
- [28] L. Becker to M. Taylor, n.d., Mill/Taylor Letters, 12, London School of Economics Library. Becker's preference was always for the BAAS rather than the National Association for the Promotion of Social Science. Founded in 1857 to discuss important social questions, it became the main forum for women's issues. For example, Frances Potter Cobbe read her paper on women's education here in 1862.
- [29] 'The propositions ... are partly derived from factors of my own direct consciousness and such as I have gathered on careful observation and comparison of the working of my own mind with that of other men and women'. L. Becker to Professor F. Newman, 5 October 1868, Letter Book, MCLA.
- [30] L. Becker (1868) The Equality of Women, *ER*, September, p. 51.
- [31] The motion does not appear to have progressed beyond the proposal stage.
- [32] L. Becker to John L. Becker, November 1868, Letter Book, MCLA.
- [33] The Equality of Women, *ER*, September 1868, p. 54.
- [34] *Ibid.*, p. 53.

- [35] L. Becker to J. Butler, 1 November 1868, Letter Book, MCLA. This singles out the *Pall Mall Gazette*, *The Times* and the *Saturday Review*.
- [36] *Lancet*, 5 September 1868, p. 320.
- [37] *Ibid.*, p. 321. A very different portrait is given by the *Manchester City Lantern* several years later. Although anti-suffragist, it respected her character and work for Manchester and attempted to correct the continuing distortion by the press, with its implications that she was an embittered spinster:
People, who do not know better, think that Miss Lydia Becker is a sort of Amazon – a Gorgon in spectacles ... Miss Becker has the courage of La Pucelle, but like Joan, is one of the most feminine of her sex ... she has much of the feminine refinement of Florence Nightingale and Mary Russell Mitford.
 (Manchester City Lantern, 3 August 1877, p. 1, MCLA)
- [38] *The Lancet*, 9 October 1869, p. 510.
- [39] This was a reference to Sophia Jex-Black and several other women who were struggling to study medicine at Edinburgh University.
- [40] Becker organised a Memorial to the Associations Council in 1869, asking for clarification on the question of representation on the governing bodies – and for the discontinuation of ladies' tickets. The requests were rejected on traditionalist grounds, as was a second attempt made in 1885. R. Howarth's *Retrospective Study* gives a brief but sympathetic account of the first, p. 158. P. Phillips (1990), in *The Scientific Lady: a social history of women's scientific interests 1520-1918* (London: Wiedenfeld & Nicolson), refers to a 'steady agitation' against which the Association 'prevaricated and stone-walled' (p. 206).
- [41] *School Government Chronicle* (hereafter SGC), 1880, p. 255.
- [42] L. Becker, *WSJ*, October 1889, p. 25.
- [43] L. Becker (n.d.) Miss Becker on Education, *The Morning Star Newspaper Cuttings*, 2, MCLA.
- [44] L. Becker, *WSJ*, October 1889, p. 25.
- [45] *Manchester Guardian*, 22 November 1870, p. 1. Becker was a member of the National Education League, which was committed to free, universal secular education.
- [46] L. Becker, *WSJ*, September 1871, p. 96.
- [47] She relied, like other minority groups, on 'plumping', whereby a voter could use all his votes for one candidate. Becker's victory was assured because she had led the MNS campaign to place Manchester women ratepayers on the new electoral registers in 1868. In addition, the MP, Jacob Bright, a key figure in the Society, had gained women the municipal vote in 1869. She was returned through six elections (there was no election in 1876), and on two occasions came second in the poll.
- [48] L. Becker, *WSJ*, January 1871, p. 1.

- [49] Herbert Birley, New Board Schools in Manchester, 19 February 1877, Scrap Book, MCLA (no newspaper title given).
- [50] For example, during a debate on the Board's proposed scale of fees, the girls were to receive three-quarters that of boys. Becker's demand for 'perfect equality' was opposed by a leading Anglican, Alderman Joseph Lamb. He objected on the grounds that giving the girls equality would be giving them 'extra payments' (*WSJ*, March, 1871. p. 6).
- [51] L. Becker (1892) On the Attendance and Education of Girls in Manchester, *ER*, September, p. 236. This was read at the BAAS Birmingham meeting in 1872.
- [52] *Manchester Guardian*, 7 November 1882, p. 6.
- [53] C. Dyhouse (1981) *Girls Growing Up in Late Victorian and Edwardian England*, p. 28 (London: Routledge & Kegan Paul).
- [54] Becker's educational ideology was influenced by Wolstenholme and Butler, who were leading members of the influential but short-lived North of England Council for the Higher Education of Women. Founded in late 1867, the Council organised lectures in northern towns, for ladies (these led to the University Extension Lectures) and was also a forum for debate. Although strongly committed to women's higher education, Lydia attended only one Council meeting in 1871 when a major discussion was in mixed education, as a subject of particular interest to her. Her lack of involvement was mainly due to her belief that ladies' societies did not provide the solution to the many difficulties facing them.
- [55] The obligatory subjects recognised by the Education Department were the three Rs together with needlework (made compulsory in 1862) for the girls. See J.S. Hurt (1979) *Elementary Schooling and the Working Classes* (London: Routledge & Kegan Paul).
- [56] L. Becker, *Manchester Guardian*, 23 May 1871, p. 6.
- [57] *SGC*, 9 December 1871.
- [58] L. Becker (1872) Statistics showing the Disparity in Boys and Girls Education, *ER*, September, pp. 233, 234.
- [59] L. Becker, Prize-giving at Lindley Mechanics Institute, 2 October 1874, Scrap Book, MCLA.
- [60] P. Hollis (1987) *Ladies Elect. Women in English Local Government 1815-1914*, p. 169 (Oxford: Clarendon Press).
- [61] L. Becker (1871) 'On the Employment of Women', *SGC*, 2 September, p. 86.
- [62] The moral and practical justification for needlework is explored in A.M. Turnbull (1987) *Learning Her Womanly Work 1870-1916*, in F. Hunt (Ed.) *Lessons for Life: the schooling of girls and women 1850-1950* (Oxford: Oxford University Press).
- [63] *SGC*, 2 September 1871, p. 86.
- [64] L. Becker, *ER*, 14 April 1877, pp. 171, 172.

- [65] In 'Hard-Headed' and 'Large-Hearted', Women and the Industrial Schools, 1870-1885, J. Martin examines the contributions which were made by Elizabeth Surr and Helen Taylor, *History of Education* (1991), 20, pp. 187-201.
- [66] L. Becker, *WSJ*, April 1877, p. 55.
- [67] *Manchester Guardian*, 29 September 1874, p. 8.
- [68] The Committee on the Manner in which Rudimentary Science should be taught in Elementary Schools, *Annual Report of the B.A.*, 1888, p. 164.
- [69] 'Education for working-class girls was not to be a vehicle for social mobility but a means of maintaining the status quo' (J. Purvis [1981] Class and Gender in the Schooling of Working-class Girls, in L. Barton & S. Walker [Eds] *The Double Burden of Class and Gender in the Schooling of Working-class Boys and Girls in Nineteenth Century England*, p. 102 [Lewes, Falmer Press]).
- [70] A.M. Turnbull has pointed out that the middle-class interest in the teaching of domestic subjects and the provision of female servants was fostered by the organisation of Domestic Science Congresses. 'Learning Her Womanly Work', p. 25.
- [71] L. Becker, *Manchester Guardian*, 28 June 1878, p. 7.
- [72] L. Becker, New Board Schools in Manchester, Scrap Book, MCLA, 19 February 1877.
- [73] L. Becker to Mary Johnson, June 1868, Letter Book, p. 265.
- [74] *Manchester Guardian*, 31 March 1874, p. 6.
- [75] The Scriptural Mottoes, *Manchester Examiner*, 1 April 1873, p. 6.
- [76] J.A. Bremner, *SGC*, 31 August 1875.
- [77] As a leading Anglican and a Vice-Chairman, Dale's support appears surprising. It illustrates that in practice (as in Birley's case), the division between the Liberal Unsectarians and Anglicans was not always clear-cut.
- [78] L. Becker, 'On the Study of Science', p. 40.
- [79] The situation at the beginning of the twentieth century is examined by C. Manthorpe (1986) Science or Domestic Science? The Struggle to Define an Appropriate Science Education for Girls in the Early Twentieth Century, *Journal of the History of Education*, 15(3). The educational expansion which occurred at this time was merely 'an extension of a vocationally orientated' one for the working classes (p. 195).
- [80] Newsom Report (1965) *Half our Future*, para. 113. Quoted in M. Arnot (Ed.) (1988) *Race and Gender: equal opportunities policies in education* (Oxford: Pergamon Press).
- [81] In *Ladies Elect*, P. Hollis considers Lydia Becker's situation analogous to Eleanor Smith's, who was a member of the Oxford School Board. Both were 'inhibited by the fact that they were in permanent opposition which crippled somewhat the contribution they could make' (p. 139).

Joan E. Parker

[82] 'A Lady is desirable and desired by the public' (J. Beith to C.P. Scott, 2 September 1890, C.P. Scott Correspondence, University of Manchester Archives).

[83] *WSJ Memorial Number*, August 1890.

JOAN E. PARKER (Rosemary Cottage, 1 Thornbarrow Road, Windermere LA23 2EW, United Kingdom; parker@rosemarycottage.fsnet.co.uk) is a retired teacher. She has published an article in the *Manchester Region History Review* entitled 'Lydia Becker: pioneer orator of the women's movement' (1991, vol. 5) and is currently working on a biography of Lydia Becker.