

## **Able Dairymaids and Proficient Dairymen: Education and De-Feminization in the Swedish Dairy Industry**

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The role of education in the gendering of work is most often discussed in terms of educational opportunities. This is the case, for example, with Alice Clark's classic book about women in early industrialization, *Working Life of Women in the Seventeenth Century*. Alice Clark claims that women's weakened position in three originally female spheres of authority—teaching, medicine and midwifery—was caused primarily by the absence of educational opportunities.<sup>1</sup>

Focusing too narrowly on access to education can, however, give a misleading impression of the role of education in the gendering of work. The study of dairy education presented in this article shows that education had an impact on the de-feminization of skilled dairy work in Sweden primarily through the normative influence exerted on cultural interpretations of gender. The actual distribution of educational opportunities was of secondary importance. This result brings to the fore the need for more comprehensive studies of the gendered content of education. Education may have played a crucial part in creating dichotomous distinctions between masculinity and femininity not only in dairying, but also in other trades and professions.<sup>2</sup>

De-feminization of dairy work has been a characteristic trait of the transition from an agrarian to an industrial pattern in the gender division of labour in Western industrialized countries.<sup>3</sup> It is of special interest since it highlights how women's position in the course of industrialization was weakened in the work situation itself. The disappearance of exclusively female spheres of authority characteristic of the agrarian household economy meant that women were deprived of possibilities for qualified positions in production. In the long run, women in industrial work have tended to be disadvantaged in terms of skill, responsibility and independence.<sup>4</sup>

In Sweden the decline of women in dairying started comparatively late. Although some dairymen appeared as managers for larger Swedish dairies as early as the late nineteenth century, dairymen did not outnumber dairymaids until the late 1920s. An interesting feature of the Swedish case is that Swedish dairymaids (in contrast to most dairymaids in Denmark, England, Canada and the United States)<sup>5</sup> did not work chiefly within the framework of farm households, but rather entered the developing dairy industry in great numbers.

Dairymaids in early twentieth century Sweden constituted a very distinctive female occupational group. As representatives within industry of a basically agrarian pattern in the gender division of labour, dairymaids were better trained and more independent than most other women working in factories. Their work had characteristics generally associated with men's work; it was skilled, physically heavy, and it often included supervision of machines. As working 'foremen', dairymaids organized production and supervised female assistants, and in smaller dairies they were managers with responsibility for bookkeeping and sales. Dairymaids were, in short, exceptions to the general rule of women's subordinate position in relation to men in industry.



Female students make cheese in the training dairy of Åtvidaberg county of Östergötland around 1900. (By permission of Nordiska Muséet, Stockholm.)

This article focuses on the role of public dairy education in the inter-war years, a period when the Swedish dairy industry entered its final phase of de-feminization. The main question to be addressed is whether the Swedish state through its commitment to vocational dairy education promoted or counteracted the de-feminization process.<sup>6</sup> First, however, I shall outline some essential features of the history of women in Swedish dairying.<sup>7</sup>

Up to the middle of the nineteenth century, dairy products in Sweden were mostly consumed within the framework of a self-sufficient agrarian economy. Only a small number of manorial estates had separate dairies where they produced butter and cheese for sale. Not until the 1860s, when foreign demand for butter stimulated the establishment of export-oriented buttermaking dairies, did commercial milk production and dairying expand on a broader basis. In the last decade of the nineteenth century, when the domestic market grew as a consequence of industrialization and urbanization, a number of dairies also started to make cheese and distribute liquid milk.

Some of the early Swedish dairies were founded on larger farms, but since most Swedish farms in those days were very small, and consequently produced only small quantities of milk every day, private or cooperative village dairies became the most prevalent form of dairy organization. The industrialization of Swedish dairying proceeded on the basis of these small-scale village dairies.

With regard to the position of female labour, the history of dairying in Sweden may be divided into three main phases. During the first phase, up to 1850, production was located in farm households or small-scale manorial dairies, and dairying constituted a predominantly female sphere of authority. Women performed the skilled dairy work, and they also exercised a considerable influence on management and the production of knowledge in the field.<sup>8</sup>

The second phase, 1850–1890, was characterized by men's gradual advance in dairy management and the production of knowledge. The dairy enterprises that were now established all over the country were controlled by men, and a growing number of male technicians and scientists took an interest in the methods of dairy production. This phase was also characterized by several state initiatives in support of the rapidly developing dairy industry, and consequently, for the first time the gendering of dairy knowledge and dairy work was directly influenced by state action.

Up to the 1870s the state contributed principally to maintaining the traditional female predominance in dairying. As early as 1858, two public vocational dairy schools for females were established, and during the following decades the Swedish state continued to support dairy education for women in small schools and in training dairies all over the country. Their most advanced training was at the two State Institutes of Agriculture at Ultuna and Alnarp. The Ultuna Institute, situated in central Sweden, had a special course for dairymaids between 1858 and 1883. At the Alnarp

Institute, in the Southern county of Malmöhus, the county agricultural society financed a year long course for dairymaids from 1873. The majority of trained dairymaids worked at this time as managers for village dairies, but quite a few also obtained higher level positions as dairy experts and advisers. Qualified women, known as county dairymaids, were employed by several county agricultural societies.

In the 1880s, the Swedish state took the first initiative in introducing men into the sphere of dairying. As a result of a rising male interest in production methods and milk research, two higher level dairy schools for men were founded at the Swedish State Institutes of Agriculture at Ultuna and Alnarp in 1883. A new professional career, *dairy adviser* (a specialized agronomist), now existed for male students, implying that dairying was officially recognized by the Swedish state as a field of knowledge for men. Male dairy advisers were from now on more and more frequently employed by county agricultural societies to complement – or replace – the former female experts, the county dairymaids. The state support for male scientific dairy education and research was later further strengthened through the foundation of a separate Dairy Institute at the State Institute of Agriculture at Alnarp (1893). Since Alnarp is situated in the south of Sweden, the new Dairy Institute was close to Denmark and the German province of Holstein, where commercial dairying dominated by men already flourished.

In contrast to the areas of management and the production of knowledge, men made only insignificant advances in the field of skilled dairy work up to 1890, and the state took no measures to change this situation. No public vocational dairy schools for men existed, and for most Swedes at this time it was still inconceivable that a man could work in a dairy. For example, a representative of the agricultural society of Malmöhus county as late as the early 1870s reported after a visit to Denmark that he had for the first time seen a man performing all the tasks in a dairy, and, he assured his Swedish readers, 'the excellent quality of the products of the place proves sufficiently enough that it may very well be done'.<sup>9</sup> Soon after this report the agricultural society of Malmöhus county began to send young men on scholarships to Denmark for vocational training in dairying, and from 1883 the society intensified its efforts by organizing courses for dairymen at Alnarp, courses which ran parallel to the course for females at the Alnarp Institute. However, in comparison with the great number of dairymaids working in Sweden at this time, the number of dairymen educated at the expense of the Malmöhus county agricultural society remained very small despite a gradual increase in numbers and further north in Sweden the occupation of dairyman was still virtually unknown.

The period 1890–1950 constituted the third phase with regard to women's position in Swedish dairying. During this phase, men began competing with women as practising dairymen, which eventually led to an almost complete disappearance of dairymaids in all parts of Sweden. According to official statistics dairymen outnumbered dairymaids for the first time in 1927, and

some twenty years later dairymaids had become an insignificant minority of the skilled work force in the Swedish dairy industry (see Table 1 below). This final phase in the de-feminization process needs to be examined more closely from the point of view of public education.

Table 1. *Dairymen and dairymaids in Swedish dairy industry 1914–1938 (1950).*

Year	Dairymen	Dairymaids	Percentage of dairymen
1914	880	1838	32%
1916	927	1841	33%
1918	808	1528	35%
1920	865	1538	36%
1922	948	1383	41%
1924	1023	1302	44%
1926	1234	1287	49%
1928	1338	1230	52%
1930	1403	1101	56%
1932	1476	989	60%
1934	1495	802	65%
1936	1586	719	69%
1938	1636	558	75%
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1950	1292	71	95%

Sources: *SOS Mejerihantering 1920–1938* (Swedish Official Dairy Statistics 1920–1938); and *Statistiska centralbyråns arkiv, Kommerskollegii statistiska byrå, Huvuduppgifter till industristatistiken 1950* (Archive of Statistics Sweden, Industrial Statistics, primary records 1950).

The Swedish public dairy school system in the inter-war years was characterized by a marked segregation and differentiation by gender. This pronounced gendering of dairy education reached back to the 1890s, and was further strengthened in the early 1920s. The first crucial decision was taken in 1892. In response to a growing demand for male dairy managers in the butter-exporting districts of southern Sweden, the Swedish Parliament decided that a separate vocational school for dairymen should be located at the new Dairy Institute at Alnarp, in connection with the higher dairy education for male agronomists which had been financed by the state since 1883.

This decision meant that the state for the first time financed education for men, and more importantly, it implied a very distinct stance in favour of educational segregation and differentiation by gender. The earlier, non-public vocational courses for dairymen and dairymaids at Alnarp—financed by the agricultural society of Malmöhus county—had run on parallel lines under the same conditions. Now the male course was included within the Dairy Institute, while the corresponding course for females remained external.

Practising dairymen were thus associated with males on a higher educational level rather than with female colleagues on the same educational level. From a wider, national point of view, the 1892 decision meant that the education of dairymen was now concentrated in the Swedish centre of higher dairy education and dairy research, the Alnarp Institute, while the public education for females remained decentralized and mostly located at small distant training dairies, where specialised teachers rarely wanted to settle permanently. With respect to the content of education, male schools stressed the theoretical side, while practical training was emphasized in the female schools.

Even so, in the late nineteenth and early twentieth centuries the segregation between males and females in vocational dairy education was not yet complete. The agricultural society of Malmöhus county continued to finance courses for dairymaids at Alnarp, which made it possible for women under special conditions to study together with men at the respected Dairy Institute. The state took over financial responsibility for these female courses in 1916, after continual pressure from county agricultural societies in southern Sweden. The state also supported mixed courses for experienced dairymen and dairymaids at Åtvidaberg in the county of Östergötland from 1896. These courses were comparatively short, only six months, but since the students usually were experienced in dairying, the Åtvidaberg school had a good reputation.

The basic tendency towards segregation and differentiation by gender in dairy education was eventually confirmed and made more explicit through an educational reform in 1921. The official report on dairy education which was the basis of the 1921 reform recommended that the existing division between male and female dairy education should be retained. Men should be educated for independent and superior positions, while women should be trained to organize and execute the practical sides of dairy work, above all in smaller dairies. The guiding principle was, in short, that leading dairymen and subordinate, able dairymaids should complement each other in the dairy profession.<sup>10</sup> This policy in favour of a more marked vertical division of labour by gender within the profession was accentuated by the decisions to withdraw state support from the female course at Alnarp (1921) and from the dairy school at Åtvidaberg (1923). Subsequently, public dairy education for males was concentrated in Alnarp, while dairymaids were educated only within the separate dairy school system for females.

Did the state educational policy in favour of a professional differentiation by gender in dairy work imply that the Swedish state also promoted de-feminization, that is, the complete exclusion of women from dairy work? As far as the explicit intentions behind the policy are concerned, it is quite clear that the *aim* of educational policy in the field of vocational dairy education was not to substitute men for women in skilled dairy work. This conclusion is supported by various statements from official representatives in the course of the inter-war years. As late as 1938, for example, the National

Board of Agriculture maintained that dairymaids 'probably as earlier will have an important mission to fulfil within the profession'.<sup>11</sup> Furthermore, from a survey of the distribution of public educational opportunities between men and women it is evident that priority in the dairy school system was given to female students. Females constituted sixty-five per cent and males only thirty-five per cent of the total number of students in public dairy schools up to 1938. This meant in absolute terms that about forty-five dairymaids, but only twenty-five dairymen, passed their exams each year in the 1930s.

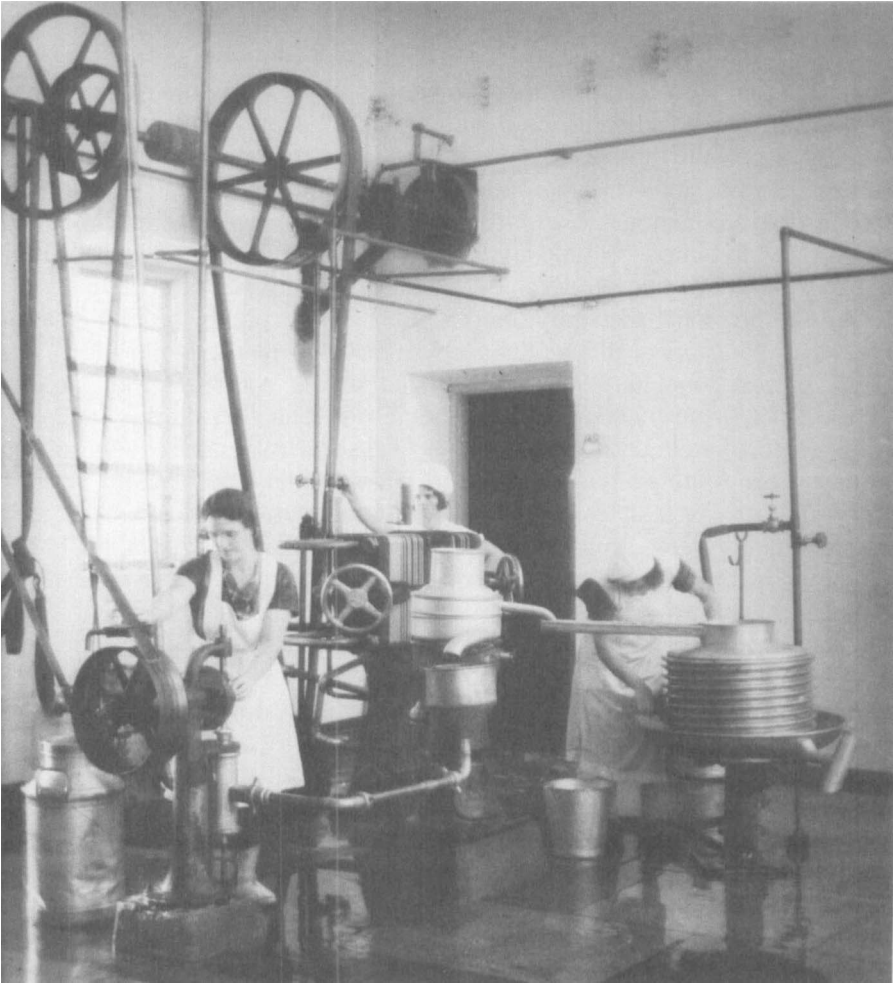
With regard to the actual *effects* exerted by educational policy on the de-feminization process, a more thorough investigation reveals a contradictory picture. The state appears to have counteracted the de-feminization process from a strictly quantitative point of view, while the qualitative differentiation of dairy education promoted men's gradual advance within skilled dairy work.

In order to assess the quantitative impact of educational policy, I examined the distribution of educational opportunities between men and women in relation to changes in the sex-ratio of market demand and in the number of male and female applicants for vocational dairy education. This led to the conclusion that women were relatively favoured in the public dairy school system, increasingly so in the course of the inter-war period.

An estimation of the market demand for dairymen and dairymaids shows that public vocational education for females clearly exceeded market demand, at least from the end of the 1920s. Until then, there is evidence that demand for dairymaids was considerably higher than for dairymen, but from then on, demand for dairymaids started to decrease. This decreasing demand for dairymaids finally resulted in a very unbalanced relation between educational output and market demand, which is clearly illustrated by a direct comparison between the sex-ratio in dairy education on the one hand and in the dairy industry on the other. In 1938 there were three times as many dairymen as dairymaids working in the dairies, while the public dairy schools could accept only half as many male as female students.

A similar picture emerges with regard to applications. The number of female applicants appears to have already been limited in the 1920s, and in the 1930s applications from females declined markedly. This meant that female applicants could frequently be accepted the first time they applied, and in the 1930s there is even some evidence that female dairy schools did not succeed in recruiting a full group of students. In contrast, most men had to work as apprentices for several years before being admitted to the Alnarp dairy school. The pressure from male applicants was especially marked in the 1930s, when, as a rule, only one out of four applicants was accepted. The scarcity of public educational opportunities for dairymen pushed male students to seek alternatives, and as a consequence the Åtvidaberg dairy school – since 1923 a private institution – increased its number of male students. In the middle of the 1930s Åtvidaberg accepted more than 25 male students each year, which was actually a greater number than was admitted at the more comprehensive

and respected public school at Alnarp. The unbalanced distribution of public educational opportunities in favour of women was, however, not fully shown until the late 1930s, when the Swedish Parliament passed new legislation effecting public vocational dairy education. The 1938 reform, which was preceded by lengthy discussions and two official reports on the subject, opened all dairy schools to students of both sexes. In this situation, the continual pressure from male applicants resulted in men rapidly entering the former female schools, while the opposite process – females entering Alnarp – did not take place.



A dairymaid and her assistants in a typical village dairy, Västmanland, 1934. Note the old fashioned open separator in the middle and milk cooler on the right. (By permission Nordiska Muséet, Stockholm.)



From the point of view of the qualitative content of dairy education, I would argue that the differentiation of education by gender influenced the de-feminization process directly, because dairymen and dairymaids left dairy schools with different levels and types of competence. Even more significantly, it also had an indirect impact because dairy education in the inter-war years played an important role in transforming existing cultural interpretations of gender in dairying.

The direct significance of the differentiation of education by gender for the de-feminization process is related to the vocational requirements in the inter-war industry. There is no doubt that men in the Swedish inter-war dairy school system were educated for independent and leading positions, while women were educated for subordinate positions. Male students received a slightly more extensive education in management than their female colleagues, and their professional training in dairying was more extensive and theoretical. Female students, on the other hand, had more intensive practical training, especially directed towards independent positions in small dairies or subordinate positions in larger dairies. Furthermore, they frequently specialized in the production most prevalent in the region where the school was situated, which implied that dairymaids often attained a considerable skill in the making of specific products, above all different types of cheese.

More importantly, the study of educational policy points to the increasing impact of educational differentiation by gender on the de-feminization process. As vocational requirements changed in the course of the inter-war period, so did the meaning of educational differentiation. In the 1920s the stress on small-scale production and practical skills in female schools appears to have been quite adequate in relation to vocational requirements. Swedish dairy industry was at this time still extremely decentralized, and most establishments were comparatively primitive and small in size. In the 1930s, though, the Swedish dairy industry started to rationalize and concentrate rapidly, influenced by the severe world depression. In this situation, the qualitative differences between male and female dairy education took on a new meaning. First, women's training for positions in small dairies became less adequate, as hundreds of small dairies closed down, while the larger dairies demanded comprehensively educated foremen to lead increasingly large-scale, mechanized and scientifically based production. Secondly, rationalization brought about more severe competition for qualified positions, and in the long run this keen competition made it difficult for women to assert themselves in the labour market. The final process of exclusion proceeded in two steps. In the early 1930s women's practical skills were still called for, and a growing proportion of dairymaids were employed as specialized cheese-makers and buttermakers in the new, larger-scale dairy enterprises. In the late 1930s, however, this subordinate female niche in larger dairy enterprises gradually disappeared as the concentration of dairy production reduced the number of superior positions, and young dairymen at the beginning of their careers were forced to start at lower positions. In a situation of more severe

competition dairymaids, though practically skilled, were at a disadvantage in relation to dairymen, since their competence was less extensive and less suited to large-scale production techniques. Furthermore, it is probable that dairy enterprises at this time increasingly preferred to take on men instead of women in order to secure the future recruitment of foremen and dairy managers.

The direct influence of differences in competence on the de-feminization process in dairy work must not, however, be over-emphasized. As has been pointed out by Anne Phillips and Barbara Taylor, Jane Gaskell and others, skill – or competence – must be seen as a socially constructed and gendered category.<sup>12</sup> 'The work of women is often deemed inferior simply because it is women who do it',<sup>13</sup> Phillips and Taylor claim, and in the case of dairying, where women's work could not be devalued since it was almost identical with men's, I would argue that men's professional competence was generally deemed superior because it was men who possessed it.

The group of dairymen educated at the private dairy school at Åtvidaberg constitutes an illuminating example of this process. The vocational dairy course at Åtvidaberg was short, only six months, in contrast to the one-year courses offered at the public schools, and the teaching laid stress on the practical side, just as in the female dairy schools. Nevertheless, dairymen educated at the Åtvidaberg school were considered by employers – and considered themselves – superior to female colleagues, and, if anything, equal to male dairymen educated at Alnarp.

Another example originates from the 1938 educational reform, which resulted in men being accepted as students at female dairy schools. The dairymen who subsequently made use of this possibility to enter female schools had a lower status than dairymen educated at Alnarp or Åtvidaberg, but they certainly asserted themselves with success in comparison with females educated at the same schools. It is interesting to note that a number of these dairymen, who in the late 1930s and in the 1940s acquired an originally female training, have done well in their work in the Swedish dairy industry up to the present day.

The basic problem for dairymaids was their female gender rather than their competence. This point was made clear by a contemporary commentator who claimed that dairymen must be offered a more qualified education than dairymaids because of the more demanding positions 'generally obtained by men'.<sup>14</sup> In other words, dairymen should be offered more qualified education, not in order to obtain demanding (superior) positions, but because they obtained these positions anyway, by virtue of their gender, and consequently must be prepared for them.

In the light of this extended discussion of the qualitative aspects of dairy education, I would argue that the most important influence of gender differences in public vocational education was not direct, but rather indirect. To begin with, the more extensive and qualified education given to male students at Alnarp helped to confirm and strengthen the superior position

which dairymen had already obtained, and which they further consolidated in the inter-war years. Dairymen were generally associated with superior education, although many of them had the same type of educational experience as dairymaids.

More widely, the differentiation of public dairy education by gender had a strong, normative influence on the concurrent transformation of cultural interpretations of gender in dairying. The segregation between males and females in education resulted in a more distinct conceptual division of the basically united dairy profession; dairymen were contrasted with dairymaids, and thus the ever-present gender difference was marked and strengthened. Furthermore, the fact that male dairy students were offered a more theoretically qualified and up-to-date education strengthened a conceptual association of science and modern industrial techniques with the male gender. Dairymen were considered as the coming men, the representatives of a new and different art of dairying. The education of dairymaids, on the contrary, contributed to associating dairymaids with a past stage in the history of dairying. The stress on the practical side in female vocational training, as well as the location of female schools in a number of small training dairies, linked women to the old times, when dairying was still a female mystery pursued on the basis of practical experience.<sup>15</sup>

To sum up, the intention of educational policy in the field of dairying in the inter-war years was, without doubt, that women should continue to play an important part in Swedish dairy industry. This is evident not least from the



A dairyman in Stockholm, 1951. By the 1950s dairying had developed into a completely mechanized and scientifically based production while dairymen had replaced dairymaids. (By permission Arla Dairy Company, Stockholm.)

large share of dairy education devoted specifically to females. However, as the rationalization and concentration of Swedish dairy production gathered speed in the 1930s – at a pace obviously not envisaged either by responsible politicians or by the National Board of Agriculture – the actual effects of the policy pursued turned out to be somewhat contradictory. From a strictly quantitative point of view, the state counteracted the de-feminization process by continuing to finance a substantial number of exclusively female dairy schools, in spite of a decreasing interest in female dairy education and a diminishing demand for dairymaids from employers. From a qualitative point of view, on the other hand, the state promoted the de-feminization process directly, and more importantly, indirectly by giving men a more extensive and adequate training. This qualitative prioritization of men was of greater importance for the timing and outcome of the de-feminization process than the continued support of numbers of women. In short, an educational policy aimed at educating a considerable number of dairymaids for subordinate positions eventually ended up counteracting women's participation in skilled dairy work as a whole.

The process of de-feminization in Swedish dairying constitutes one particularly striking illustration of new structures of gender created during industrialization. Dairymaids in the inter-war Swedish dairy industry represented an agrarian pattern in the gender division of labour, embodying a pre-industrial type of femininity, characterized by independent participation in productive work and physical strength. Both the decline of women in dairying and the accompanying reinterpretation of the gendered meaning of dairywork meant that these basically pre-industrial gender traits were weakened in the work organization as well as in the construction of meaning. This, in turn, helped to remove some of the ambiguities characterizing the significance of femininity in the early phases of industrialization.

## Notes

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1. Alice Clark, *Working Life of Women in the Seventeenth Century* (1919; repr. Routledge and Kegan Paul, London, 1982), chapter VI.

2. Compare the analyses put forward by Cynthia Fuchs Epstein, *Deceptive Distinctions. Sex, gender, and the social order* (Yale University Press, New Haven and London, 1988), pp. 11–16; and Joan Wallach Scott, *Gender and the Politics of History* (Columbia University Press, New York, 1988).

3. Marjorie Griffin Cohen, 'The decline of women in Canadian dairying', *Histoire Sociale – Social History*, 34 (1984); Bodil K. Hansen, 'Rural women in late nineteenth-century Denmark', *The Journal of Peasant Studies*, 2 (1982); Joan Jensen, *Loosening*

the *Bonds. Mid-Atlantic farm women 1750–1850* (Yale University Press, New Haven and London, 1986); Sally McMurry, 'Women and the expansion of dairy production: Cheesemaking in Oneida County, New York, 1830–1870', (paper prepared for the Seventh Berkshire Conference on the History of Women, June 1987, unpublished), and by the same author 'Women's work in agriculture: divergent trends in England and America, 1800–1930', forthcoming in *Comparative Studies in Society and History*; Ivy Pinchbeck, *Women Workers and the Industrial Revolution 1750–1850* (1930; repr. Virago Press, London, 1985); Deborah Valenze, 'The art of women and the business of men: Women's work and the dairy industry c. 1740–1840' *Past and Present*, No. 130 (Feb. 1991).

4. Research about the impact of industrialization on female labour has mainly dealt with the separation of home and workplace and the implications of this separation on women's work opportunities. The more specific aspect of women's position in the work situation itself has been less observed. For a review of the discussion about the impact of industrialization on female labour, see Harriet Bradley, *Men's Work, Women's Work. A sociological history of the sexual division of labour in employment* (Polity Press, Cambridge, 1989), pp. 33–49; and Marjorie Cohen, 'Changing perceptions of the impact of the industrial revolution on female labour', *International Journal of Women's Studies*, 4 (1984). An interesting case study dealing with changes in women's work in the course of industrialization is Ingeborg Fløystad, *Kvinnekår i endring. Kvinnene sitt arbeid i Ama, Hordaland 1870–1930* (Universitetsforlaget AS, Bergen, 1986). Women's position in work in Scandinavian agricultural households is dealt with, inter alia, in Anna Jorunn Avdem, 'Bondekvinna og "hamskiftet"', and Brit Berggreen, 'Fra kvinnebonde till bondekvinne', both in *Kvinnenes kulturhistorie. Bind 2. Fra år 1800 til vår tid*, eds Karl Vogt, Sissel Lie, Karin Gundersen and Jorunn Bjørgum (Universitetsforlaget, Oslo, 1985); Ingeborg Fløystad, *Kvinnekår i endring*, especially pp. 48–94 and pp. 191–227; David Gaunt, *Familjeliv i Norden* (Gidlunds, Stockholm, 1983), pp. 117–143; Bodil K. Hansen, 'Kvindearbejde på landet ca 1870–1900' in *Konferensrapport från det nordiska kvinnohistorikermötet i Oslo 20–23 februari 1983* (NAVFs sekretariat for kvinnoforskning, Oslo, 1984); Ole Højrup, *Landbokvinden* (Nationalmuseet, Copenhagen, 1964); Orvar Löfgren, 'Kvinnofolksgöra – om arbetsdelning i bondesamhället', ('Women's work. On the division of labour in Swedish peasant society', with an English summary), *Kvinnovetenskaplig tidskrift*, 3 (1982); and Birgitte Possing, 'Arbetsdelning, kvinder og patriarkalisk tradition på landet i det 19. århundrede', in *Årbog for arbejderbevaegelsens historie*, eds Svend Aage Andersen, Birte Broch, Niels Senius Clausen, Hannelene Toft and Lars Torpe (*Selskabet til Forskning i Arbejderbevaegelsens Historie*, Copenhagen, 1982). For a comparison with women's position in work in Swedish industry, see for example Lynn Karlsson and Ulla Wikander, 'Om teknik, arbetsdelning och ideologi som formare av kvinnors – och mäns – arbetsvillkor', ('The role of technique, the division of labour and ideology in shaping women's and men's work', with an English summary), *Historisk tidskrift*, 1 (1987); and Ulla Wikander, *Kvinnors och mäns arbeten: Gustavsberg 1880–1980* (Arkiv, Lund, 1988).

5. Cohen, 'The decline of women in Canadian dairying'; Hansen, 'Rural women in late nineteenth century Denmark'; and McMurry, 'Women's work in agriculture' 1990.

6. This section is based on Lena Sommestad, *Från mejerska till mejerist. En studie ar mejeriyrkets maskuliniseringsprocess 1850–1950*, (From Dairymaids to Dairymen. A study of the de-feminization process of the Swedish dairy profession, Department of Economic History, University of Uppsala, 1992). The most important sources for the study have been Swedish parliamentary publications, government documents and official reports, various

types of documents and published reports from the National Board of Agriculture, documents and published reports about students and teaching at the Dairy Institute of Alnarp, and interviews with experienced, chiefly retired, dairymaids and dairymen.

7. In addition to references given currently in the text, the survey of women's role in Swedish dairying is based on the following sources: Christian Barthel, *En mejeriforskare minns* (LTs förlag, Stockholm, 1954); 'En banbryterska för mejerihanteringen i höga Norden', *Svenska Mejeritidningen*, 7 (1925); H. Juhlin-Dannfelt, *Kungl. Landbruksakademien 1813–1912 samt Svenska Lanthushållningen under nittonde århundradet* (Stockholm, 1913); *Kungl. Landbruksakademiens berättelser, handlingar och tidskrift* (Stockholm, 1871, 1883, 1885–1888); *Lantbrukets Bok* (Stockholm, 1907), vol III: Nils Engström, *Handbok i mejerihushållning*; Gustaf Liljhagen, *Mejeriminnen*, (unpublished manuscript, Library of the Royal Academy of Agriculture, Stockholm, 1936), and by the same author *Några meddelanden rörande den svenska mejerihanteringen åren 1800–1900 samt förteckning över landets mejerier år 1900* (Stockholm, 1901); Olaus Magnus, *Historia om de nordiska folken* (1555; repr. Gidlunds, Stockholm, 1982); *Mjölkcenralen. Lantmännens mjölkförsäljningsförening u.p.a. 1915–1945*, ed. Gillis Rudeberg (Stockholm, 1945); Jan-Erik Pettersson, 'Då böndernas mejerier lades ned. Långsiktig och situationsbetonad strukturomvandling i Uppsala län kring andra världskriget', ('When the farmers' dairies were shut down. Structural change in the county of Uppsala in the long-term and conditions existing around World War II', with an English summary), *Historisk tidskrift*, 1 (1983); Gustav Ränk, *Från mjölk till ost. Drag i den äldre mjölkhushållningen i Sverige (Nordiska Muséet, Stockholm, 1966)*; *SOS Mejerihantering and Statistiska Centralbyråns arkiv, primäruppgifter till mejeristatistiken* (Swedish Official Dairy Statistics, published statistics and primary records from the Archive of Statistics Sweden, Stockholm); *Svensk Mejeriindustri. Svenska Mejeriernas Riksförening 1932–1957* (SMR, Stockholm, 1957). Reviews of the history of women in Swedish dairy industry are given in *Mjölk och människor. Liv och arbete vid Uppsala mejeri 1871–1985*, ed. Lena Sommestad (Hallgren och Fallgren Förlag, Uppsala, 1987); and Lena Sommestad, 'Från mejerska till mejerist', ('From dairywomen to dairymen', with an English summary), *Historisk tidskrift*, 1 (1987).

8. Concerning Swedish farmwomen's role as dairy managers on the farms during the first phase up to 1850, it is worth observing that dairying never was of similar economic importance for Swedish farm households as in, for example, Denmark, England and parts of the United States. This meant that dairying in Sweden could not constitute a comparable basis for independence and economic status for the farm wife. There is nevertheless some evidence that Swedish farm wives considered their control over dairying as an important source of independence. For information about other countries, see for example Hansen, 'Rural women in late nineteenth-century Denmark' (Denmark); Jensen, *Loosening the Bonds* (Pennsylvania); McMurry, 'Women and the expansion of dairy production' (New York State); and finally, for England, McMurry, 'Women's work in agriculture' 1990; Clark, *Working Life of Women in the Seventeenth Century*; Leonore Davidoff, 'The Role of Gender in the "First Industrial Nation". Agriculture in England 1780–1950', in *Gender and Stratification*, eds Rosemary Crompton and Michael Mann (Polity Press, Cambridge, 1986); Deborah Valenze, 'The art of women and the business of men', *Past and Present* (1991) and Pinchbeck, *Women Workers and the Industrial Revolution*. Evidence from Sweden is given in Hans Persson, 'Något om mejerihanteringen inom Västmanlands län', *Svenska Mejeritidningen*, 25 (1924).

9. Report by county dairy adviser J. Johnson in *Malmöhus läns hushållningssällskaps Kvartaltidskrift*, July 1872.

10. The attribute 'able' (in Swedish *duglig*) was often used in the inter-war years in connection with dairymaids. The normative formulation was given in the 1921 decree about female dairy schools, (*SFS no 509, 1921*). According to this decree, the aim of a state dairy school was to 'train women to become skilful and able dairymaids' (§ 1).

11. *Riksarkivet, Jordbruksdepartementets arkiv, Konsejakt 25/2 1938, Lantbruksstyrelsen angående den lägre mejeriundervisningens omorganisation*, p. 12, (Swedish National Archive, Archive of the Department of Agriculture, government documents).

12. Jane Gaskell, 'Conceptions of Skill and the Work of Women: Some Historical and Political Issues', in *The Politics of Diversity*, eds Roberta Hamilton and Michèle Barrett (Verso, London, 1986); Anne Phillips and Barbara Taylor, 'Sex and skill: notes toward a feminist economics', in *Waged Work. A Reader*, ed. Feminist Review, (first published in *Feminist Review*, 6 (1980), Virago Press, London, 1986).

13. Phillips and Taylor, 'Sex and skill', p. 55.

14. Comment on an official report about dairy education from a representative of the Swedish Association of Dairy Advisers, quoted from *Riksdagstrycket 1931*, prop. 84, p. 31 (Reports from the Swedish Parliament).

15. Compare McMurry, 'Women's work in agriculture', pp. 8–9.