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A CENTURY OF PRODUCTIVITY  
IMPROVEMENT: REVOLUTION IN  
THE AMERICAN STANDARD OF LIVING

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Revolution in the American Standard of Living

ABSTRACT

In the mid 1800s United States per capita output was similar to that today in such less developed countries as Honduras and the Phillipines, and even less than that in China, Bolivia and Egypt. Since then, the real value of the goods and services available to an average American has risen by an astonishing 800 percent. In this paper we describe how these developments helped an extraordinarily high percentage of Americans achieve a standard of living undreamed of in the 19th century. We examine a number of the components of the standard of living -- including housing, diet, working conditions, incomes and family budgets, public health, longevity and physical stature, education, leisure time and consumer goods -- comparing conditions that prevailed in the 19th century with those of today. We see that the reality of the changes is even more dramatic than the statistics suggest. The amenities of life that almost every American can take for granted today -- including electricity, indoor plumbing, safe public water and sewage systems, instant mass communications, access to technologically-sophisticated medical care, a remarkable variety of foods, a vast array of consumer goods, low infant mortality and long life expectancy, and the luxury of vacations and retirement years -- were all virtually absent a century ago.

A CENTURY OF PRODUCTIVITY IMPROVEMENT:  
REVOLUTION IN THE AMERICAN STANDARD OF LIVING

Sue Anne Batey Blackman\* and William J. Baumol\*\*

1. Introduction

The last hundred years have brought with them economic growth and productivity gains so great that the numbers elude intuitive grasp. The average American's scale of living has risen to a level undreamed of a century earlier. The statistics indicate that in the mid 1800s United States output per capita was similar to that today in such less developed countries as Honduras and the Phillipines and slightly below that in China, Bolivia and Egypt. Since then, the real value of the goods and services available to an average American is calculated to have risen by an astonishing average of 800 percent (U.S. Department of Commerce, 1975, p. 224 and 1982, p. 421).

These developments helped an extraordinarily high percentage of Americans to achieve what in 1870 would have been considered an incredible standard of living. The amenities of life that almost all of us take for granted today -- including electricity, indoor plumbing, safe public water and sewage systems, instant mass communications, access to technologically-sophisticated medical care, a remarkable variety of fresh and ingeniously-packaged foods from around the nation and the world, free public education, low infant mortality and long life expectancy -- were all virtually absent a century ago.<sup>1</sup>

Here we seek to describe in some detail how economic growth transformed American life.<sup>2</sup> By comparing today's living conditions with those that prevailed in the 19th century we hope to bring to life the striking but abstract statistics on productivity and output gains. We touch on a broad range of activities and conditions -- housing, diet, working conditions, incomes and family budgets, public health,

longevity and physical stature, transportation, education, leisure time and consumer goods -- and draw upon a wide variety of sources of evidence -- from vital statistics in U.S. Census reports to personal oral histories, from hypothetical "typical" budgets produced by newspapers and magazines to genealogical records and mail-order catalogues, diaries and journals of foreign visitors, and broad-ranging sociological and historical studies.

Of course, most readers are aware, as we were, that the American standard of living has improved greatly since the 1800s. Still, the enormous magnitude of the change may come as a surprise. 19th century America of popular literature and film is often shown in a romantic light, peopled by robust, hardworking but ultimately prosperous pioneers, or members of polite Victorian society in the established towns and cities of the East, marred only occasionally by glimpses of poverty in the backwoods and tenements. But for much of the 19th century the reality of life for the great majority of the population was one of unrelieved drudgery and deprivation. Average incomes were abysmally low (far below any modern standard of poverty), providing only the bare necessities of life. The state of medical care and public health was appalling -- great epidemics of deadly disease were commonplace and infant mortality cruelly high -- and the average life expectancy of someone born midcentury was only 40 years. Cities were unsanitary, crowded places where smokestack industries were beginning to foul the air. In the countryside people lived and worked in conditions that would not have been unfamiliar in the Middle Ages. Most families were housed in places affording no privacy or any of the most basic amenities. Men, women and, often, children worked long hours to secure this scale of life, and vacations or retirement for the elderly were unheard of. As we will see, the reality of the changes in American life in the last century is even more startling than the statistics on economic growth would suggest.

## 2. Life in the 19th Century: Overview

In the mid 1800s the United States, with a total residential population of about 32 million, was still predominantly a rural, agricultural nation. Fully half of the workforce was involved in the most basic task of feeding the nation (Beniger (forthcoming, p. ). Only one eighth of the population lived in "cities" of 8,000 or more; 44 percent of the country's citizens lived on farms, and perhaps half of those dwelt in log cabins of one or two rooms (Martin (1942), p. 106). Today, in contrast, less than 4 percent of the labor force is employed in agriculture and nearly three-quarters of the population live in areas classified as urban (U.S. Department of Commerce (1982, pp. 21 and 375).

There seems no better way to get a sense of the pace and scale of life in the 1800s than to read some first-hand accounts from that time. In this chapter we present a few such descriptions of 19th century American life. In the first, living conditions of a rural "mechanic's"<sup>3</sup> family in Pennsylvania during the latter quarter of the 19th century through the early part of the 20th are described by a daughter, Nettie, in an oral history compiled by Peggy Heim:

"(The family) lived far out in the country (where) the nearest villages were 7 and 10 miles away in opposite directions (and) neighbors lived far apart. They built their house by hand and made most of their own tools (and had to dig their well by hand, using pick and shovel)... The father made his livelihood as a skilled laborer, and the family

had 16 acres for a garden, a field each of wheat and corn, and some fruit trees. They had no horse, no carriage, no wagon; there was no public transportation....The children walked 5 miles each way...to the one-room school house. The father walked 7 miles each way to pay his taxes....They raised pigs and chickens (and) shot rabbits, squirrels, game birds, and deer to increase their meat supply....They had to borrow a horse to plow the field; the rest of the (farm) work they did by hand - with such hand-made tools as spade, hoe, clod-hopper, hand-pushed tiller, hand-pulled sled, and wheelbarrow. Their house had no indoor plumbing. Water had to be pumped, carried by bucket to where they used it, and carried out again after use for disposal. They dipped their hot water from a bucket on the stove. They washed their hands under the pump, and washed themselves in a basin of water. A more thorough basin-washing was their bath. The house had no closets. Clothes lay in hand-made chests or hung on wooden pegs from doors and walls. Since they had only a few changes of clothes, a few pegs each sufficed. They warmed the house with a wood stove, which also provided the heat for cooking. Except for the room with the stove, the rooms were cold in winter. They sat, cooked, ate and worked in one room; and the five of them slept in another. For their firewood, they had to chop down a tree in the near-by forest, drag it in on a hand-pulled sled, chop it into stove lengths, stack it, and then carry the wood into the house when they wanted to use it. They had to grow or raise almost all their own food or find it in the wild. They raised many root crops, like potatoes, turnips, and beets, or other vegetables, like cabbage, which kept well in a root cellar over the winter. To have additional food for winter, they spent many hours preserving fruits and vegetables. They dried grapes and sliced apples for pies, peas and beans for stews and soups.... In the late winter and early spring they dug dandelion roots and crowns, gathered their tender leaves, and cooked greens of wintercress, poke weed and wild mustard. They made their tea from the dried leaves of wild plants - mint, comfrey, and penny royal. They ground dandelion roots, which when boiled made a passable native coffee. The daughters had to stop school after 8th grade; the family couldn't pay the board and public school fees in town. They could read and comprehend quite well -- though they had little around to read." (Heim (1985))

Rural life in the 1800s, then, was not easy, and "the frontier has often been described as one big rural slum saved only by the fact that the open spaces were not far away...." (Furnas (1969), p. 261). Nevertheless, life in urban America was often even worse. As Peggy Heim writes in her account of Nettie's life:

"They worked hard, and their life was far from easy. But compared with factory workers and day laborers of that era, their level of living and comfort was noticeably higher than their urban counterparts, for they had outdoor space, healthful environment, a varied and sufficient diet, diverse activities, and some control over their use of time and the way they expended effort. If they had had no land, had been unable to raise pigs and chickens, and had only a miniature garden, their life would have been far less satisfactory."

(Heim, p. 11)

### 3. Family Budgets: Subsistence in the 19th Century

In the mid 19th century most American families spent nearly every dollar on the basic requirements of life: food, clothing and shelter, obviously leaving little for medical care, education, entertainment, and so on. For example, a survey in 1874-5 of families of wage-earners in urban Massachusetts (Table 1) found that an average family of five spent fully 91 percent of its income on these needs. Another budget from 1851 reproduced by Edgar Martin (1942) had the "typical" Philadelphia workingman's family spending 41 percent of its budget on food alone, and 97 percent on food, clothing and shelter (see Table 2). A "Standard Workingman's Budget" for New York City in 1853 (Table 3) devoted 46 percent to food, and 92 percent to the combined needs of food, clothing and shelter.

In contrast, as early as 1950 an average urban family of 3.4 persons was spending 31 percent of its after-tax income on food, and only 68 percent on food, clothing and shelter (Table 4). The Bureau of Labor Statistics'

Table 1

Average Income for 397 Massachusetts Families of Wage Earners in  
15 Cities and 21 Towns, 1874-75

|   |       |
|---|-------|
| Average Money Income                        | \$763 |
| Average Family Size                         | 5.1   |
| Average Expenditures for Goods and Services |       |
| Subsistence (Food)*                         | \$427 |
| Clothing                                    | 106   |
| Rent  | 117   |
| Fuel  | 44    |
| Sundry Expenses **                          | 44    |

Source:

U.S. Department of Commerce (1975), pp. 320 and 322, which cites Massachusetts Bureau of Statistics of Labor, Sixth Annual Report, March 1875, Public Document No. 31, pp. 221-354, 372, 373, and 441.

Notes:

\* Includes kerosene.

\*\* Some specified sundries included furniture, carpets, books and papers, societies and religion, charity, sickness, care of parents, care of house, recreation, housegirl, travel to work, life insurance.

Table 2  
Workingman's Budget, Philadelphia, 1851

| Item of Expenditure  | Amount          |
|--|-----------------|
| Butcher's meat (2 lb. a day).....                                      | \$ 72.80        |
| Flour (6½ bbl. a year).....  | 32.50           |
| Butter (2 lb. a week).....   | 32.50           |
| Potatoes (2 pk. a week).....   | 26.00           |
| Sugar (4 lb. a week).....  | 16.64           |
| Coffee and tea.....  | 13.00           |
| Milk.....  | 7.28            |
| Salt, pepper, vinegar, starch, soap, soda, yeast,<br>cheese, eggs..... | 20.80           |
| <b>Total expenditures for food.....</b>                                | <b>\$221.52</b> |
| Rent.....  | \$156.00        |
| Coal (3 tons a year).....  | 15.00           |
| Charcoal, chips, matches.....  | 5.00            |
| Candles and oil.....   | 7.28            |
| Household articles (wear, tear, and breakage)...                       | 13.00           |
| Bedclothes and bedding.....  | 10.40           |
| Wearing apparel.....   | 104.00          |
| Newspapers.....  | 6.24            |
| <b>Total annual expenditures.....</b>                                  | <b>\$538.44</b> |

Source: Martin (1942), p. 394, who cites New York Daily Tribune, May 27, 1851.

Table 3  
Standard Workingman's Budget, New York City, 1853

| Item of Expenditure                     | Amount          |
|---|-----------------|
| Groceries.....                          | \$273.00        |
| Rent.....                               | 100.00          |
| Clothing, bedding, etc.....             | 132.00          |
| Furnishings.....                        | 20.00           |
| Fuel.....                               | 18.00           |
| Lights.....                             | 10.00           |
| Taxes, water, commutation.....          | 5.00            |
| Physicians' and druggists' charges..... | 10.00           |
| Traveling.....                          | 12.00           |
| Newspapers, postage, library fees.....  | 10.00           |
|   | <b>\$590.00</b> |
| Church, charity, etc.....               | 10.00           |
| <b>Total annual expenditures.....</b>   | <b>\$600.00</b> |

Source: Martin (1942), p. 395, who cites New York Times, November 8, 1853. Martin writes that even these minimal budgets "represent a scale of living which must have been out of reach of the great majority of working-class families...." (p. 396).

**Table 4**  
**Consumption Expenditures of 7,007 City Wage- and Clerical-Worker Families**  
**of 2 or More Persons, 1950**

|  |         |
|--|---------|
| Average Income After Taxes                   | \$3,923 |
| Average Family Size                          | 3.4     |
| Average Expenditures for Current Consumption |         |
| Food   | \$1,205 |
| Alcoholic Beverages                          | 70      |
| Tobacco                                      | 79      |
| Housing                                      | 415     |
| Fuel, Light and Refrigeration                | 163     |
| Household Operation                          | 155     |
| Furnishings and Equipment                    | 278     |
| Clothing                                     | 453     |
| Transportation:                              |         |
| Automobile                                   | 472     |
| Other  | 69      |
| Medical Care                                 | 200     |
| Personal Care                                | 91      |
| Recreation                                   | 177     |
| Reading                                      | 34      |
| Education                                    | 17      |
| Miscellaneous                                | 47      |

Source: U.S. Department of Commerce (1975), p. 320.

**Table 5**  
**Annual Budgets for Urban Families of Four, At Three Levels of Living, Autumn 1978**

|                                       | Lower    | Inter-<br>mediate | Higher   |
|---------------------------------------|----------|-------------------|----------|
| Total budget                          | \$11,546 | \$18,622          | \$27,420 |
| Total family consumption              | 9,391    | 14,000            | 19,225   |
| Food                                  | 3,574    | 4,609             | 5,806    |
| Housing                               | 2,233    | 4,182             | 6,345    |
| Transportation                        | 858      | 1,572             | 2,043    |
| Clothing                              | 847      | 1,209             | 1,768    |
| Personal care                         | 301      | 403               | 570      |
| Medical care <sup>1</sup>             | 1,066    | 1,070             | 1,116    |
| Other family consumption <sup>2</sup> | 515      | 956               | 1,578    |
| Other items <sup>4</sup>              | 502      | 810               | 1,365    |
| Taxes and deductions <sup>3</sup>     | 1,654    | 3,811             | 6,830    |
| Social security and disability        | 719      | 1,073             | 1,091    |
| Personal income taxes                 | 935      | 2,738             | 5,739    |

<sup>1</sup> On the assumption that the home was purchased 6 years ago, these costs reflect changes in principal payments and mortgage interest rates from 1971 to 1972, and changes in property taxes, insurance, fuel and utilities, and repairs and maintenance from 1977 to 1978.

<sup>2</sup> For retired couple, "medical care" includes a preliminary estimate for "out-of-pocket" costs for Medicare.

<sup>3</sup> For both families, "other family consumption" includes average costs for reading, recreation, tobacco products, alcoholic beverages, and miscellaneous expenditures. Costs for education are also included for 4-person families.

<sup>4</sup> For 4-person families, "other items" includes allowances for gifts and contributions, life insurance and occupational expenses. For retired couples the categories includes allowance for gifts and contributions and, in the higher budget, life insurance.

<sup>5</sup> Beginning with the autumn 1973 updating of the budget for a retired couple, the total budget is defined as the sum of "total family consumption" and "other items." Therefore, income taxes are not included in the total budgets for retired couples.

NOTE: Because of rounding, sums of individual items may not equal totals.

Source: U.S. Bureau of Labor Statistics (1980), p. 44.

hypothetical average budgets for lower, intermediate and higher income families in 1978 devoted, respectively, 58 percent, 54 percent and 51 percent of family income to food, clothing and shelter (see Table 5), and as Table 6 shows, between 1888 and 1961 average family expenditures on food and drink fell from 44 percent to 27 percent.

In New York City in the mid 1800s not even one percent of the population earned as much as \$850 (roughly the equivalent of \$7,200 1980 dollars). In most parts of the country the average laborer earned only \$250 to \$400 a year (or about \$2,100 to \$3,400 in 1980 dollars), while skilled workmen did very well to make \$700 a year (less than \$6,000 in 1980 dollars).<sup>4</sup> Even the highest of these incomes is below the official 1980 poverty line of \$8,400 (for a family of four persons), which did not take account of all the noncash benefits such as food stamps, Medicaid and public housing that most low-income persons receive today, all of which were absent in the 1800s.<sup>5</sup>

#### 4. Food Consumption

These days, not only do Americans spend a much smaller proportion of their incomes on food, but they have a vast cornucopia of food products from which to choose. Today's supermarket, with its 8,000 items (Lebergott (1984), p. 68), includes fresh fruits and vegetables transported cross-country year-round, frozen, canned and freeze-dried produce, and other items packaged to assure safety and wholesomeness.

In the mid 19th century low incomes, local weather conditions, crop cycles, an almost complete lack of refrigeration and very limited transport of goods bound a very large part of the population to a minimal and nutritionally-inferior variety of foods -- potatoes, lard,<sup>6</sup> cornmeal and salt pork were

Table 6  
Consumption Expenditures of City Wage- and Clerical-Worker Families  
of Two or More Persons, 1888-91 to 1960-61

| Item   | 1960-61                               | 1950  | 1934-36 | 1917-19 | 1901   | 1888-91 |
|--|---------------------------------------|-------|---------|---------|--------|---------|
| Families covered.....number.....                       | 19,455                                | 8,994 | 14,469  | 12,096  | 11,156 | 2,662   |
| Average family size.....persons.....                   | 3.6                                   | 3.3   | 3.6     | 4.9     | 4.0    | 3.9     |
| Average money income before taxes.....current dol..... | 6,763                                 | 4,299 | 1,518   | 1,505   | 651    | 573     |
|  | In constant 1950 dollars <sup>a</sup> |       |         |         |        |         |
| Money income after personal taxes.....                 | 4,677                                 | 4,005 | 2,659   | 2,408   | 1,814  | 1,783   |
| AVERAGE OUTLAYS  |                                       |       |         |         |        |         |
| Current outlays for goods and services, total.....     | 4,604                                 | 4,078 | 2,564   | 2,163   | 1,817  | 1,671   |
| Food and drink.....                                    | 1,297                                 | 1,335 | 1,030   | 854     | 852    | 797     |
| Clothing.....  | 541                                   | 473   | 309     | 343     |        |         |
| Shelter (current expense).....                         | 539                                   | 448   | 356     | 252     |        |         |
| Fuel, light, refrigeration, and water.....             | 207                                   | 153   | 158     | 126     |        |         |
| Household furnishings and equipment.....               | 297                                   | 281   | 119     | 109     |        |         |
| Household operation.....                               | 225                                   | 167   | 80      |         |        |         |
| Automobile purchase and operation.....                 | 635                                   | 457   | 150     |         |        |         |
| Other transportation.....                              | 50                                    | 81    | 57      |         |        |         |
| Medical care.....                                      | 243                                   | 213   | 88      |         |        |         |
| Personal care.....                                     | 130                                   | 93    | 55      |         |        |         |
| Recreation.....  | 194                                   | 191   | 67      | 479     |        |         |
| Reading.....   | 34                                    | 36    | 27      |         |        |         |
| Education.....   | 42                                    | 19    | 11      |         |        |         |
| Tobacco.....   | 88                                    | 80    | 46      |         |        |         |
| Miscellaneous goods and services.....                  | 82                                    | 49    | 11      |         |        |         |

Estimated number of families, in thousands, represented by sample.  
 The cost of living index developed by Paul Douglas (*American Economic Review*, Supplement, March 1926, p. 22) was used to convert the 1888-91 and 1901 expenditures

into 1950 dollars. The Consumer Price Index of the Bureau of Labor Statistics was used for the surveys thereafter.

Source: U.S. Department of Commerce (1975), p. 322.

consumed in large quantities, particularly outside the population centers. Most travellers' accounts of meals in 19th century America mentioned the ubiquity of some kind of one-pot stew. Ruth Schwartz Cowan (1983) writes, in a historical study of household practices,

"That meal, the stew, symbolizes the very simple standard of living that most Americans (and, indeed, most Europeans) maintained in the centuries prior to industrialization. Everyday meals were uncomplicated and monotonous; much of the food that people ate was served without preparatory effort or with minimal cooking. Diets lacked variety, and standards of cleanliness were not what they are today....There were, of course, a few people who knew what it was to...eat a meal that consisted of more than one course; but there were very, very few such people, and they were all very rich. The poor, and even the middling comfortable, could not aspire to such creature comforts....Cleanliness of body and variety of foodstuffs were perquisites only of the very rich in ages past."  
(Ch. 4)

Still, when compared with other countries and earlier ages, 19th century Americans were fortunate in the foods they consumed. Cowan lists the foods that ordinary Americans ate before the twentieth century: "Bread, cheese, butter, porridge, eggs, raw fruits and vegetables in season, preserved fruits and vegetables out of season....all of it washed down by beer, cider, milk, or coffee (rarely water as that was often undrinkable)" (p. 21).

Moreover, by the mid 1870s things were beginning to change, at least for the upper middle class. The noted Philadelphia Centennial Exposition of 1876 publicized a variety of new food processing techniques: canning, mechanical refrigeration, machines for popping corn, condensing milk, making ice cream and peeling apples, all of which, according to the Smithsonian Institution (1986), "caused sensations." The commentary goes on to add that "the simple and unvaried American diet based on seasonally and locally available foods was revolutionized almost overnight as people at the Exposition were introduced to unusual foods from far away places that could be preserved and shipped economically, with little risk of spoilage, to local markets."

Even before the exhibition most Americans undoubtedly had reason to feel that they lived in a land of unprecedented abundance -- that one-pot stew was quite sure to be there everyday.<sup>7</sup> For many centuries in Europe for most of the population nearly half the food budget had gone into breadstuffs, and for most of them the bread was of what was considered a very inferior variety. Still more commonly, it took the form of gruel (in good years) -- what we would think of today as a breakfast cereal. Gruel was consumed in life-sustaining quantities, but there were many years when even gruel was unavailable.

Famine continued to threaten Europe until the beginning of the 19th century, and earlier had constituted a normal fact of existence. Fernand Braudel (1979) writes,

"A few overfed rich do not alter the rule....Cereal yields were poor; two consecutive bad harvests spelt disaster....Any national calculation shows a sad story. France, by any standards a privileged country, is reckoned to have experienced 10 general famines during the tenth century; 26 in the eleventh; 2 in the twelfth; 4 in the fourteenth; 7 in the fifteenth; 13 in the sixteenth; 11 in the seventeenth and 16 in the eighteenth. While one cannot guarantee the accuracy of this eighteenth-century calculation, the only risk it runs is of over-optimism, because it omits the hundreds and hundreds of local famines....They did not always coincide with more widespread disasters.

The same could be said of any country in Europe. In Germany, famine was a persistent visitor to the towns and the flatlands. Even when the easier times came, in the eighteenth and nineteenth centuries, catastrophes could still happen....famine struck Bavaria, and moved beyond its frontiers in 1816-17: on 5 August 1817, the city of Ulm celebrated with thanksgiving the return to normal with the new harvest....

It would be rash to conclude that the towns, habitual grumblers, were the sole victims of these acts of God. They had warehouses, reserves, corn exchanges, purchases from abroad - in fact a whole policy directed towards future contingencies. Paradoxically the countryside sometimes experienced far greater suffering. The peasants lived in a state of dependence on merchants, towns and nobles, and had scarcely any reserves of their own. They had no solution in case of famine except to turn to the town where they crowded together, begging in the streets and often dying in public squares, as in Venice and Amiens in the sixteenth century.

The towns soon had to protect themselves against these regular invasions, which were not purely by beggars from the surrounding areas but by positive armies of the poor, sometimes from very far

afield. Beggars from distant provinces appeared in the fields and streets of the town(s)...starving, clothed in rags and covered with fleas and vermin."

(Volume I, pp. 73-75, footnotes omitted, Braudel's emphasis)

In sum, the American's monotonous one-pot stew, while a far cry from today's widespread variety, was an incredible improvement over what had almost always been available to the bulk of the population before.

### 5. Housing

The housing story is similar to that of food. The end of the nineteenth century was a midpoint, far worse than today, but far better than that in earlier Europe. Thus, for example, in the seventeenth century,

"...in Paris, in the suburbs of Saint-Marcel and even Saint-Antoine, only a few craftsmen-joiners were comfortably off; in Le Mans and Beauvais the weavers lived in penury. But in Pescara on the Adriatic, a small town with about a thousand inhabitants, an inquiry in 1564 revealed that three-quarters of the families in the town, who had come from the nearby mountains or from the Balkans, were virtually homeless, living in makeshift shelters (what we should call shantytowns). And yet this was in a town which, although small, had its fortress, garrison, fairs, harbour, salt works and was, after all, situated in Italy in the second half of the sixteenth century when it was linked with the Atlantic and the wealth of Spain. In the very rich town of Genoa, the homeless poor sold themselves as galley slaves every winter....

The poor in the towns and countryside of (Europe) lived in a state of almost complete deprivation. Their furniture consisted of next to nothing, at least before the eighteenth century, when a rudimentary luxury began to spread....Inventories made after death, which are reliable documents, testify almost invariably to the general destitution. Apart from a very small number of well-to-do peasants, the furniture of the day labourer and the small farmer in Burgundy even in the eighteenth century was identical in its poverty....But before the eighteenth century, the same inventories mention only a few old clothes, a stool, a table, a bench, the planks of a bed, sacks filled with straw. Official reports for Burgundy between the sixteenth and the eighteenth centuries are full of 'references to people (sleeping) on straw...with no bed or furniture' who were only separated 'from the pigs by a screen.'

(Braudel (1979), pp. 284-286)

In the U.S. in the second half of the nineteenth century things were better, but not all that much. The amenities of life in rural Illinois, Michigan and Minnesota in 1850 were described in one Midwesterner's reminiscences:

"In the ruder cabins floors were made of (rough planks), in the better ones of evenly sawed oak boards (which in time shrank and left cracks which let in the cold air)....The clapboard roof of the cabin let snow sift in. The stone fireplace and hearth occupied a large part of one end of the cabin....The one window contained six panes of glass, six by six inches, and the door was swung on wooden hinges and was fastened with a wooden latch and a leather string. The furniture included a little table with a Bible and an almanac on it, two beds, each with a huge feather tick and sheets and blankets and a prized counterpane and perhaps a trundle bed....A large chest contained more bedclothing and some of the better wearing apparel. Meals were cooked on the stone hearth and over the fireplace....The chief cooking utensil was a 'spider' - a skillet with legs and with a heavy iron cover which held hot coals; other skillets were also used, placed directly on the fire...Candles were made at home, in molds, and coarse cloth and carpets were woven at home on a loom. Outhouses were built with several rooms - a smokehouse, a room for rendering lard, rooms for soap-making, washing, and so on. People in that part of the country seldom took baths; when a bath was necessary they used a wooden tub....In some cabins and houses there was furniture brought from the East; but usually split-bottomed chairs and homemade walnut or maple chests and bedsteads were the best the prairie could afford. In the more remote communities, at least, settlers were dependent for light upon 'grease dips' -- twisted woolen rags fastened to a button sunk in a saucer of melted grease."

(Martin (1942), pp. 136-138)

Most of the homes that Frederick Olmstead saw on his travels in rural America in the mid-1800s,

"were small houses of logs or loosely boarded frame construction, usually without glass windows. Some were built on stilts, and many of them were built with roofs projecting eight or ten feet beyond the wall; a part of the space thus formed could be inclosed to make a sort of room. The fireplace was usually at one end, of sticks and mud. Other travelers described the farmers' houses in much the same terms--no glass, no lighting except for the fireplace, the doors hung on gudgeons and fastened with wooden latches and strings of green hide, outside chimneys of the crudest construction. Furniture was scanty and home-made."

(Martin (1942), p. 131)

Living conditions in the tenements (that is, the slums) of urban America during the 1800s were truly abysmal. In New York City in the 1860s an average of six persons living in a ten-by-twelve room was common. In 1890, Jacob Riis wrote, of the lower Manhattan tenements,

"It is said that nowhere in the world are so many people crowded together on a square mile as here. In (one seven-story tenement building) there were 58 babies and 38 children that were over five years of age....In Essex Street two small rooms in a six-story tenement were made to hold a 'family' of father and mother, twelve children, and six boarders....These are samples of the packing of the population."

(Riis, 1890)

The worst evils of these overcrowded slums were insufficient light and air, with narrow airshafts that conveyed foul air and disease and served as inflammatory flues when fire broke out; there were no private water closets or washing facilities in these buildings and cellars and courtyards were foul.

For the better-off in towns and cities, (a very small proportion of the population) life was of course much easier and the level of housing far superior.<sup>8</sup> It was, however, still primitive by modern standards. For example, even in the cities baths were rare. No homes, of course, had electricity and few had gas. Fewer still had hot running water, and not even two percent had indoor toilets and cold running water. Boston, with a population of nearly 200,000 in 1860 had only 31,000 sinks, 4,000 baths and 10,000 water closets (about half of which were extremely primitive affairs). New York City, population 630,000 in 1855, had only 1,400 baths and 10,000 water closets. Albany (population in 1860: 62,000) had in 1859 19 private baths and 160 water closets. Outdoor privies were the norm and baths, for the great majority, a luxury (and were still feared by many as unhealthy). Kerosene for lamps was just catching on, with most lamps lighted by lard oil, whale oil and some coal oil (while most of the country was still lighted

by homemade candles.<sup>9</sup>

Again, for contrast, we note that by 1980 the U.S. Census of Housing had uncovered only 2.2 percent of American housing units (including private, single-family homes, apartments, trailers, and so on) that lacked complete plumbing (defined as hot and cold piped water, a flush toilet and a bathtub or shower, for the exclusive use of that housing unit), and only 4.5 percent were occupied by more than 1.01 persons or more per room (U.S. Department of Commerce (1982), pp. 754-5). Of the new, privately-owned, one-family houses built in 1981, fully 60 percent had three bedrooms, 46 percent had two bathrooms, and 65 percent central air conditioning (p. 748). And literally 99.9 percent of all households had an electric vacuum cleaner, an electric toaster, a black and white television (89.8 percent had a color television), a radio, an electric iron, and an electric coffeemaker (99.8 percent were equipped with electric refrigerators, 92.8 percent had electric mixers, 77 percent had electric washing machines, 68 percent had electric frypans, 63.6 percent had electric can openers, and 64 percent had electric blankets! (p. 758, figures are for 1979)).

## 6. Clothing and Hygiene

As late as the mid 1800s almost all the clothing that Americans wore was handmade, though only in fairly remote regions and the poorest rural backwaters was cloth still handspun and handwoven. Over the course of the century factory production of cloth increased rapidly, and (spurred by the Civil War's demand for large quantities of uniforms in standard sizes and patterns) the production of factory-made clothing for men also expanded. Men's suits and overcoats were almost all factory-made by the late century, with women's and children's clothing still almost all handmade (except for women's

heavy winter cloaks).

The wealthy few were outfitted in professionally hand-tailored clothing, and indeed well-to-do American women were sharply criticized abroad for their extravagance of dress. But the typical farmer made do with "...a pair of jeans or perhaps denim pantaloons (trousers), probably factory-made because they were so cheap, and a rough work shirt, possibly made by his wife or daughter. With these he probably wore a suit of flannel underwear, cotton or woolen hose, stout brogans, and a...wool hat." His changes of clothing consisted of "...perhaps two or three shirts and as many pairs of socks, rarely an extra pair of pantaloons. In a day when cleanliness was not taken too seriously he didn't need to worry about what to wear when his shirt or drawers became soiled" (Martin (1942), p. 197). A "poor white" girl glimpsed by a traveller in the South wore "a soiled, greasy, graying linsey-woolsey gown which was apparently her only garment" (Gilmore (1862), p. 166, 170). And the clothing of the children of the slaves in the South "...was like the annals of the poor, short and simple, merely a shirt which reached to the knees. Shoes and hats were useless encumbrances for pickaninnies in winter as well as in summer. Older negroes received a new suit of clothes, two pairs of shoes, and a cheap hat each year...." (Martin (1942), pp. 201-202).

In 1850 commercial laundries hardly existed; 40,000 women gave their occupation as laundresses in the 1860 Census (Martin, p. 215). The latest in washday technology consisted of a revolving barrel turned by a handcrank, but most people still used a washboard to scrub their clothes, and ironed with heavy flatirons heated up on a stove. Most also made their own soap at home, and many recipes were available in the cookbooks of the time. In the mid 1800s any commercial manufacturing of soap was carried out by meatpacking enterprises, since a byproduct of that industry was the fat necessary to make soap.

In any event, personal cleanliness was certainly not the obsession that it is among Americans today. The lack of indoor plumbing, unheated rooms, few changes of clothing (and no easy way to clean them) plus the general poverty were all obstacles to the level of personal hygiene to which we are accustomed. Even the relatively well-off readers of Godey's Lady's Book were admonished to beware of too many baths: the May 1860 issue summarized with approval an article from Hall's Journal of Health: bathing in the evening was discouraged, but to bathe in the morning, briefly, and not oftener than once a week, was alright (vol. 60, p. 464).

#### 7. 19th Century Consumer Goods

As incomes rose over the course of the century Americans were able to purchase an ever-increasing variety of household conveniences and other consumer goods, including such items as the hand-driven washing machines just mentioned, water taps for indoor cisterns, egg beaters, pulley-driven butter churns, apple parers, double boilers, and the like. By the late 1800s mail order department stores had begun to thrive; the Sears Roebuck and Montgomery Ward catalogues made it possible for Americans to order just about any of these household items.

Once again, the catalogues show, above all, how much better off at least middle class Americans were toward the end of the nineteenth century than anything that had been known in Europe in earlier centuries. The catalogues offer a fascinating glimpse into the way of life then, showing what (at least a large portion of) the populace wore, how it travelled, what it read, how it spent leisure time and what amenities were available. For instance, in the 1895 Montgomery Ward catalogue only four pages are devoted to ready-made suits for ladies and children while 31 pages are packed with all

manner of fabrics to be sewn by the housewife into the family's clothing, bed linens, and other household items. The 39-page book department advertised 3000 titles, from best sellers to "How to Make and Use a Telephone" to "The Physical Life of Women." The optical goods department featured a test-yourself chart to be held a certain distance from the eyes in order to determine which eyeglasses to order. There were "scientific" instruments such as the "Portable Electro-Medical Battery" to cure "paralysis, rheumatism, neuralgia, and all nervous diseases." Twenty nine pages were devoted to saddlery and harnesses, and the largest department of the catalogue was Guns and Sporting Goods, with 30 of the 59 pages devoted to firearms and ammunition. Labor-saving devices for the household included hand-powered clothes wringers, self-adjusting carpet sweepers, ice boxes for refrigeration, and all manner of hand and animal powered farm implements including a sheep or dog-powered treadmill to operate a milk separator.

In Table 7 we present an unscientific, but illuminating, sampling of goods listed in the Sears Roebuck catalogues of 1905 and 1985. This small sample is sufficient to portray dramatically the differences in the kinds of consumer goods that have become available since the turn of the century: For example, a "Speech Synthesis" electronic telephone in 1985 vs. one year's supply of stationery in 1905; a "Shapemaster 1000" exercise machine in 1985 vs. a state-of-the-art hand-powered sheep-shearing machine in 1905, a digital automobile engine analyzer vs. a side-sprung runabout buggy. In Table 8 we reproduce from Lebergott (1984, p. 492-3) a wrap-up of some of the dramatic changes in American consumption and living conditions since 1900 -- among them the sharp drop in consumption of inferior foods, the decrease in the percent of families taking in boarders and lodgers, and the number of families today with running water, flush toilets and refrigerators (virtually 100 percent).

Table 7a  
Items Offered in the 1905 Sears Roebuck Catalogue: A Sample

|   |  |
|---|--|
| Travelling trunks                                       | Hot water bottle   |
| Hatmaking goods, trims, etc.                            | Bust form  |
| Games (checkers, ouija boards,<br>dominoes, chess sets) | Ladies', men's and children's shoes  |
| Jokester articles                                       | Rubber footwear  |
| Dolls and toys  | Leggings   |
| Chamber pots  | Cobbler outfits  |
| Cuspidors   | Yardgoods  |
| Butter ladles   | Long underwear   |
| Men's dogskin coats                                     | Men's furnishings  |
| Buffalo fur coats                                       | Hand-cranked coffee mills  |
| Made-to-order men's suits                               | Galvanized, odorless commodes and<br>slop buckets  |
| Imported palm plants                                    | Clothes pins and lines   |
| "Teddy" bears   | Irons  |
| Wood, coal or corncob-burning stoves                    | Egg beaters  |
| Wood-burning steel ranges                               | Tinware  |
| Pot-bellied stoves                                      | Brass beds   |
| Laundry stoves  | House paint  |
| Gas ranges  | Velocipedes (three-wheeled)  |
| Box and folding cameras                                 | Surveyor's instruments   |
| Photograph developing outfits                           | Hearing horns  |
| Draftsman sets  | Musical instruments  |
| Kerosene "Magic Lantern"<br>outfits for slideshows      | Battery-operated telephones  |
| Lawn tennis goods                                       | Telegraph outfits  |
| Boxing equipment  | Gas light fixtures   |
| Carpet sweepers   | Kerosene lamps   |
| Firearms  | Clocks   |
| Animal traps  | Fountain pens and ink pencils  |
| Hunting knives  | Pocket watches   |
| Cowboy's waterproof wool-<br>lined bed sheet*           | Home tooth forceps for extracting teeth  |
| Gospel tents  | Toilet preparations  |
| Circus tents  | Hair tonic   |
| White duck emigrant wagon covers                        | Rouge  |
| Razors  | Toothbrushes and sundries  |
| Castor oil  | Toothache remedies   |
| Carbolic arnica salve                                   | Hand-cranked cream separators  |
| Boil remedy   | Treadle-operated sewing machines   |
| Cod liver oil   | Books (Bibles, cookbooks, dictionaries,<br>family doctor manuals, how-to-do books<br>such as blacksmithing and beekeeping) |
| Blackberry cordial**                                    | Six-month correspondence course in<br>bookkeeping  |
| Quinine pills   | Stationery   |
| Methylene blue compound pills<br>for gonorrhoea         | Buggies, surreys, phaetons, cabriolets   |
| "Quick death: bug killer                                | Commercial wagons  |
| Bed bug exterminator                                    | Farm wagons  |

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\* "for herders, prospectors, explorers who are compelled to sleep in a tent or on the ground."

\*\* "formerly known as blackberry brandy...used and prescribed by many physicians as one of the simplest and most effective remedies for all derangements of the stomach and bowels...tones up and invigorates the system."

Table 7a continued

Horse harnesses  
Paddles  
Lariats and other ranch gear  
Hand-cranked sheep-shearing machines  
Buggy whips  
Lap robes  
Tombstones  
Railroad attachments for bicycles  
Bicycles  
Stereoscopic views  
Spectacles and eyeglasses\*  
Hearing horns  
Talking machines (gramaphones,  
graphaphones with wax cyclinder  
records)  
Electric medical battery  
Groceries (in separate catalogue)  
Ice chests  
Furniture (parlor suites, washstands, wardrobes,  
chifforobes, Morris chairs, china cabinets,  
sideboards)  
Tools  
Rotary lawn mower  
Horse-drawn plows  
Stock food  
Moliograph motion picture machines  
kerosene-operated)  
Beehives and beekeeper supplies  
Poultry brooders  
Windmills and towers  
Hand-operated washing machines  
Clothes wringers  
Building plans (for homes)  
Bathroom equipment (toilets, sinks, tubs)  
Cavalry riding pants  
Wigs  
Carpets  
Wallpaper  
Rubber buggy tires  
Cowboy saddles

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\* With test-yourself chart included.

Table 7b  
Items Offered in the 1985 Sears Roebuck Catalogue: A Sample

Electronic, stereo-sound televisions  
Electric irons, skillets, coffeemakers,  
woks, toasters, waffle irons, vacuum  
cleaners, etc.  
Electronic sewing machines  
Fluorescent light fixtures  
Video cassette recorders  
Speech synthesis telephones  
Microwave ovens  
Frostless refrigerator/freezers  
with automatic ice makers  
Exercise equipment  
Electric weed trimmers  
Digital automobile engine analyzers  
Fitted, no-iron sheets  
Electric razors  
Electronic blood pressure monitors  
Men's, women's and children's clothing  
(about half the catalogue)  
Power-propelled lawn mowers  
Plastic house shutters  
Electric water pumps  
Convection electric heaters  
Stainless steel sinks  
Electronic dishwashers  
Electronic clothes washers and  
dryers  
Video movie cameras  
Electronic typewriters  
Citizen band radios  
Automatic-dial telephones  
Personal computers and software  
Electric air conditioners  
Gas furnaces  
Portable radios  
Cassette players  
Plastic indoor/outdoor carpeting  
Electronic bathroom scales  
House paint  
Backyard storage buildings  
Farm and Ranch Catalogue which  
includes:  
Beekeeping outfits  
Bees  
Poultry and supplies  
Electric grain mills  
Electric milk pasteurizers  
electric winches  
electric sheep-shearers  
25-mile solar-powered electric  
fencing  
Gas or electric chain saws  
gas-powered tractor mowers

Plus 19 other special catalogues,  
including:  
Big and tall men's clothing  
Women's and half-size  
Uniforms  
Work clothes  
Home health care products  
Mother-to-be and baby products  
Home appliances  
Kitchen and bath products  
Carpeting  
Power and hand tools  
Office equipment and supplies  
Heating and cooling supplies  
Boating equipment  
Cameras and Photo/Video supplies  
Stitch, latch and other crafts  
Recreational vehicle and camping  
equipment  
Toys  
Motorcycle accessories

Table 8

CONSUMPTION CHANGES, 1900 TO 1979

|  | 1900  | 1979  |
|--|-------|-------|
| Food: Percent of families consuming  |       |       |
| Lard   | 95    | 9     |
| Salt pork  | 83    | 4     |
| Molasses   | 69    | 2     |
| Corn meal  | 90    | 22    |
| Food: Per capita consumption (pounds)  |       |       |
| "Inferior" foods   |       |       |
| Flour and meal   | 300   | 140   |
| Potatoes   | 212   | 83    |
| Milk   | 274   | 187   |
| Preferred foods  |       |       |
| Sugar  | 86    | 132   |
| Meat   | 148   | 222   |
| Food preparation   |       |       |
| Flour: percent baked at home   | 92    | 22    |
| Expenditures on raw vegetables as percent for all vegetables   | 96    | 30    |
| Expenditures on food at home as percent for all food   | 99    | 82    |
| Housing: Value of average dwelling (1958 dollars)  | 4,727 | 7,000 |
| Housing: Percent of families   |       |       |
| With: boarders and lodgers   | 25    | 2     |
| over 1 person per room   | 49    | 8     |
| over 3½ persons per sleeping room  | 23    | 7     |
| Without: running water   | 76    | 2     |
| flush toilets  | 87    | 4     |
| central heat   | 99+   | 22    |
| gas or electric light  | 88    | 0     |
| Heating with: wood   | 50    | 1     |
| coal   | 50    | 3     |
| Owning: refrigerator   | 18    | 99    |
| washing machine  | 5*    | 70    |
| vacuum cleaner   | 0     | 92    |
| Tobacco: Cigarettes produced (millions)  | 5     | 673   |
| Transport: Percent of urban families   |       |       |
| Owning a horse   | 20    |       |
| Owning a car   |       | 80    |
| Recreation: Percent of families with   |       |       |
| Radio  | 0     | 96    |
| TV   | 0     | 99    |
| Phone  | 5     | 91    |
| Health: Death rate from  |       |       |
| Pneumonia  | 153   | 33    |
| Diarrhea   | 116   | 0     |
| Typhoid  | 31    | 0     |
| Health: Physicians per 1,000 population  | 1.72  | 1.86  |
| Service expenditures per capita (1972 dollars) (rent, health, transport, recreation, personal care, education, etc.) | 37    | 340   |

\*Rough approximation.

## 8. Working Conditions and Leisure Time

In 1850 the typical workday in factories, shipyards and shops was a little over 11 hours (six day a week), and even in 1900 workweeks still averaged about 57 hours.<sup>10</sup> Farm workers, who still constituted half of the labor force, worked the traditional "first light to dark" workday, and employees put in longer hours in some occupations (for instance, dry goods and grocery clerks in New York and Chicago in the midcentury worked 14 hours a day, six days a week (Martin (1942), pp. 344-5). Maddison (1982) reports that annual hours worked per person in 1870 amounted to 2,964 compared to 1,607 in 1979 (p. 211). Clearly, the modern preoccupation with recreation and leisure activities such as sports, cultural events, vacationing and vacation travel, television viewing and the like is a vast change from life in the 19th century. Vacations were certainly unknown except for the very rich; for nearly all the population there was little time (or money) for recreation;<sup>11</sup> almost all time and energy were taken up with long hours of hard work. What little leisure time did exist was often devoted to church activities or the celebration of the rare general holidays (such as the Fourth of July).<sup>12</sup>

It was also virtually unknown in the 19th century for members of the laboring population to enjoy a period of retirement in their later years; people literally worked themselves into the grave. It was also common for children to work. As late as 1890, 150,000 children were employed in factories. Today, adult wages have risen enough so that children no longer must contribute income to ensure most families' economic survival. Mandatory school laws and child labor laws have also contributed to this change (Wells (1982)).

Working conditions, too, were far from idyllic, as is illustrated by the following recollections of Pauline Newman, who in 1911 was a child laborer in a garment factory:

"We started work at seven-thirty in the morning, and during the busy season we worked until nine in the evening. They didn't pay you any overtime and they didn't give you anything for supper money. Sometimes they'd give you a little apple pie if you had to work very late. That was all. Very generous....

We had a corner on the floor that resembled a kindergarten -- we were given little scissors to cut the threads off. It wasn't heavy work, but it was monotonous.

Well, of course, there were laws on the books, but no one bothered to enforce them. The employers were always tipped off if there was going to be an inspection. "Quick," they'd say, "into the boxes!" And we children would climb into the big boxes the finished shirts were stored in. Then some shirts were piled on top of us, and when the inspector came -- no children. The factory always got an okay from the inspector, and I suppose someone at City Hall got a little something, too.

The employers didn't recognize anyone working for them as a human being. You were not allowed to sing.... We weren't allowed to talk to each other.... If you went to the toilet and you were there longer than the floor lady thought you should be, you would be laid off for half a day and sent home. And, of course, that meant no pay. You were not allowed to have your lunch on the fire escape in the summertime. The door was locked to keep us in....

The employers had a sign in the elevator that said: "If you don't come in on Sunday, don't come in on Monday." You were expected to work every day if they needed you and the pay was the same whether you worked extra or not.

Conditions were dreadful in those days. We didn't have anything.... There was no welfare, no pension, no unemployment insurance. There was nothing.... There was so much feeling against unions then. The judges, when one of our girls came before him, said to her: "You're not striking against your employer, you know, young lady. You're striking against God," and sentenced her to two weeks."

(Morrison and Zabusky (1980))

## 9. Education

By one estimate, in 1860 each person in the United States received during his lifetime, on the average, only 434 days of schooling (or 21 schoolmonths plus 14 days), a decided improvement over the average of 82 days in 1800, but still little more than the most rudimentary formal education. In 1870

20 percent of the population was illiterate, compared to about 4 percent in 1930 and only 1 percent in 1969. Only two percent of the population of 17 year olds in 1870 graduated from high school; one hundred years later close to 76 percent did (U.S. Department of Commerce (1975), p. 379).

Urban schools, though free, were not well attended (in 1858 the number of children registered for school in New York City was 139,441 but the average attendance was only 51,430). Rural schools were often hardly better than none. Teachers were usually poorly trained and paid, and the average annual school income per pupil was only \$4.53 in 1858 (Martin (1942), p. 299).

## 10. Travel

By the mid-1800s the isolation of the population was starting to give way, with the growth of the railroads and better roads (though, even by 1900, only 20 percent of all urban families owned a horse). But travel was still very difficult and time consuming. Railroads served only large cities and some towns that happened to be on the trunk routes. Stagecoach travel was still very important -- and in many of the frontier states it was the only means of travel, and a very arduous means of transport it was, only to be undertaken in rather extreme circumstances. Most roads were very bad, obviously unpaved, often impassable, with almost no bridges outside of the cities.

One traveller in the 1830s wrote:

"As no attention has been paid to forming or draining roadbeds, it is only for a few months during summer that they . . . are tolerable." He was aghast at the corduroy roads made in backward areas by juxtaposing 12-foot logs across the road, which kept wheels from sinking into soft ground but also forced them to progress "by . . . leaps and starts, particularly trying to those accustomed to the comforts of European travelling."

Less temperate comments were frequent from testier visitors. The Reverend Mr. Read of the Congregational Union of Great Britain, touring

Ohio in 1834 on the Lord's business, thought the road between Sandusky and Columbus more like a stony ditch than a road; a stagecoach with him as sole passenger took seven hours to go 23 miles. He was even worse off when, below Cincinnati, he was one of three passengers in a fast mail coach the horses of which trotted, keeping him so "jarred and jolted, as to threaten serious mischief . . . my hat was many times thrown from my head, and all my bruises bruised over again. It was really an amusement to see us laboring to keep our places." It was, after all, an American stage driver in Illinois who said that the mud was often so deep on his run that though he had driven a team of mules for months, he did not yet know what color they were—he never saw anything of them but their ears.

(Furnas (1969), pp. 278-9)

And, after completing an arduous trip by camel through the Middleeastern desert, George Perkins Marsh wrote, "any forty days of stage travelling in the United States would involve more of fatigue, danger and discomfort of all sorts" (Furnas (1969), p. 279).

An average of five miles per hour between Cumberland and Wheeling was typical of the rate of speed possible. Boston to New York in the 1800s was about six miles per hour. The description of these roads leads one to think of the jeep trails now to be found in the Rocky Mountains of the West, where just a few hours of such travel leave the passenger tired, sore and nauseated!

City streets were poorly, if at all, paved, obstructed and filthy -- overrun with animal scavengers. Even in New York goats, geese, chickens, sheep and pigs wandered the streets.

## 11. Life Expectancy, Physical Stature and the Public Health

American children born in 1983 can expect to live an average of almost 75 years. In 1984 infant mortality had fallen to only 10.6 deaths per 1,000 births.<sup>13</sup> In stark contrast, a century ago infant mortality hovered around 170 deaths per 1,000 births;<sup>14</sup> a female born in 1855 could expect to live an average of a little less than 41 years, while a male could expect an average life span of less than 39 years (Martin (1942), p. 220). The increase in life expectancy is truly one of the extraordinary accomplishments of modern society, and one in which productivity improvements and the resulting rise in living standards have played an important role. Recent studies have given credence to the notion that, along with advances in medical technology and the expansion of hospital services, nutritional status has played a major role in the trends in average life span (accounting for perhaps as much as 40 percent of the drop in mortality rate). In a study of the trends in both life expectancy and physical stature<sup>15</sup> between 1720 and 1980, Fogel et al. (1983, 1984) found that the middle of the 19th century probably represented a low point for both of these measures of living conditions. According to their preliminary analysis of recently tabulated genealogical records, the trends in life expectancy and height have not risen in a continuous, smooth curve toward modern levels. In fact, modern levels of life expectancy and height were reached in the mid to late 1700s, during a time when America was sparsely settled, population density was too low to support major epidemics and rural Colonialists were relatively well-fed (particularly compared to their European counterparts). Then, starting in the 1790s average life span began to decline and continued to decline for more than half a century. Average heights started to decline at the end of the 1700s and then declined sharply after about 1830; heights did not begin to rise again until the end

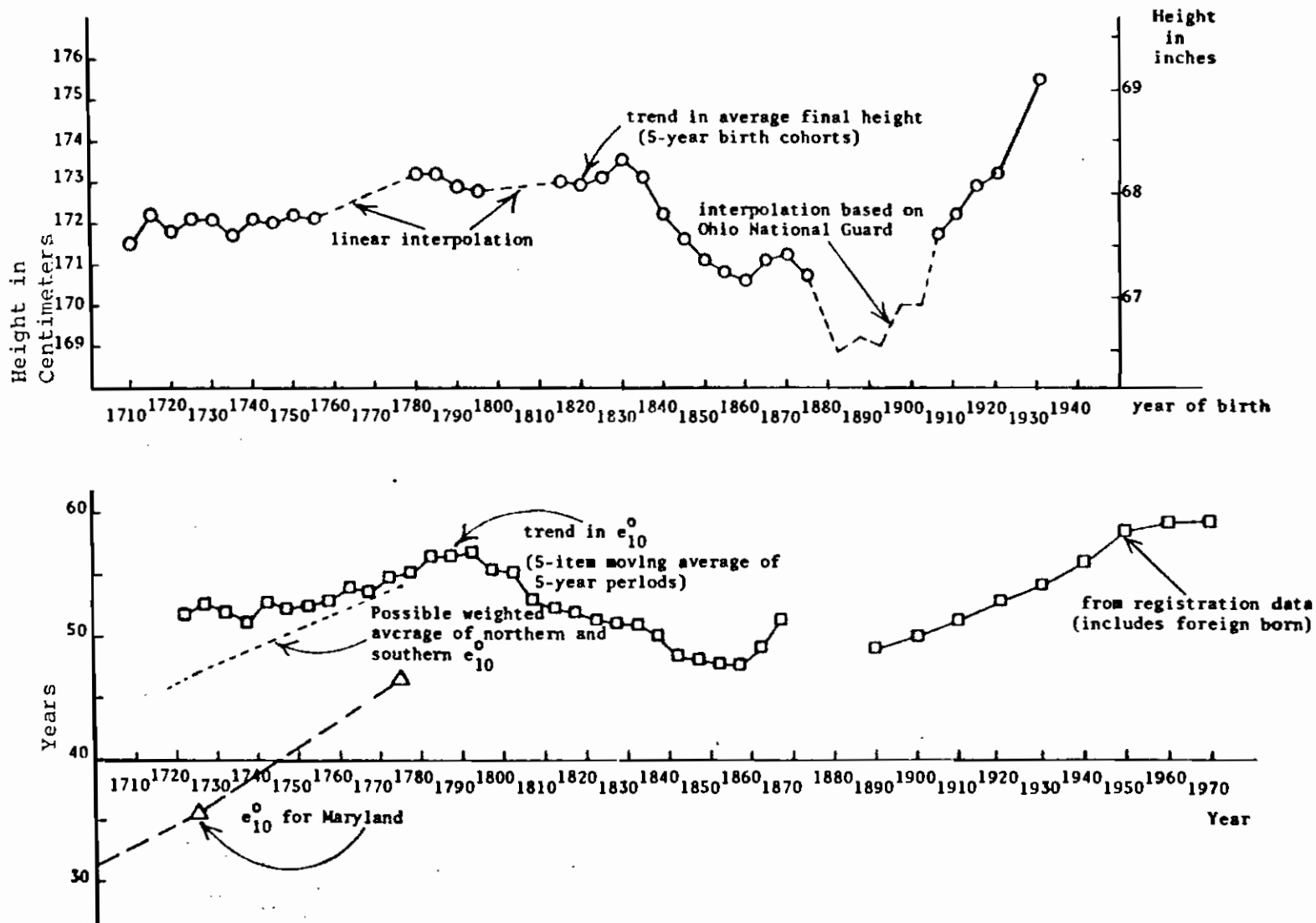
of the 19th century. Figure 1 portrays the rather similar histories of height and life expectancy.

The reasons for the declines in the 1800s are the subject of continuing debate, but they do coincide with a number of changes in American life that are plausible explanations. Certainly, living conditions for much of the laboring class deteriorated in the 19th century; a huge influx of poor immigrants most of whom settled in the cities, together with the general move of the population from the relatively wholesome and healthy countryside to urban areas (as factories sprang up and offered employment) produced extreme overcrowding. Housing conditions were wretched and the crowded tenements with their primitive sanitary provisions were perfect breeding grounds for disease. Increasing urbanization also probably contributed to the pollution and increase in disease in adjacent rural areas, for example, by polluting rivers and streams. Despite the evidence that real wages and per capita food intake were generally rising throughout the 19th century, it is also clear that these improvements were not only sporadic but very unevenly divided across the population.

Thus, public health in the 1800s (particularly in the cities, but also in towns and rural areas) was at best precarious. Great epidemics of diseases now essentially unheard of periodically ravaged the population. The most dreaded diseases were cholera and yellow fever. Particularly severe country-wide epidemics occurred in 1849 and 1854. In New Orleans alone there were 30,000 cases of yellow fever in 1853, and as late as 1879 yellow fever killed 4,000 in Memphis in a single epidemic. Typhoid fever and typhus were also common. In the early 1860s in New York City there were as many as 12,000 cases of typhoid fever a year. Smallpox was still widely prevalent, particularly

Figure 1

A Comparison Between the Trend in the Mean Final Height of Native-Born American White Males and the Trend in Their Life Expectancy at Age 10, 1710 to 1970



Notes:  $e_{10}^0$  = life expectancy at age 10

Source: Fogel (1984), p. 44.

in the seaports, and in the South and West was so common that it was taken for granted. Diphtheria was not believed to be communicable so no precautions against its spread were taken. Scarlet fever, dysentery and tuberculosis also levied a heavy toll.<sup>16</sup>

It was only in the late 1800s that scientists started to identify disease microbes and discover causes and cures. Up until then, medical practice was very crude; doctors could do almost nothing to cure disease, and their main functions, besides setting broken bones, sewing up wounds and other purely mechanical tasks, were as comforters and consolers.<sup>17</sup> Medicine had made only a few advances in diagnosis, treatment and operative techniques (for example, the use of general anesthesia in 1844). Even these few advances had little effect on improving the general medical practice of the country -- characterized by poorly trained and scientifically ignorant physicians and a scattered population the great mass of which tended to rely on family remedies and fads of all sorts: cure-all patent medicines (which were mostly alcohol), mechanical, magnetic and electrical devices supposed to be useful in treating diseases, phrenology, spiritualism, muscle manipulation, and so on. Scott and Wishy (1982) write that often the threats of disease were "...increased by supposed preventatives or palliatives like closed windows or increased warmth to treat fevers. Too many medicines were eventually found to be dangerous drugs or poisons" (p. 393). As late as the 1830s Samuel Clemens would describe the ministrations of local Missouri doctors: "Castor oil...half a dipperful...the next standby was calomel....Then they bled the patient and put mustard plasters on him...." (Furnas (1969), p. 333).

There were very few hospitals. In 1873 there were only 149 hospitals and allied institutions in the country (and one third of them were for the mentally deranged). Most were charitable institutions for the poor, and operated

under very crude, unsanitary conditions with frequent epidemics among the unsegregated patients. Anyone who could afford it was treated at home or in a doctor's office.

Legal requirements for practicing medicine were very unexacting: usually three years of study with a practicing physician and two courses of lectures at a medical college. Dentistry was a branch of doctoring, consisting largely of extractions, with ingested alcohol the only anesthetic available. Oliver Wendell Holmes declared in 1860, "If the whole materia medica, as now used, could be sunk to the bottom of the sea, it would be all the better for mankind, --and all the worse for the fishes" (Martin (1942), p. 231).

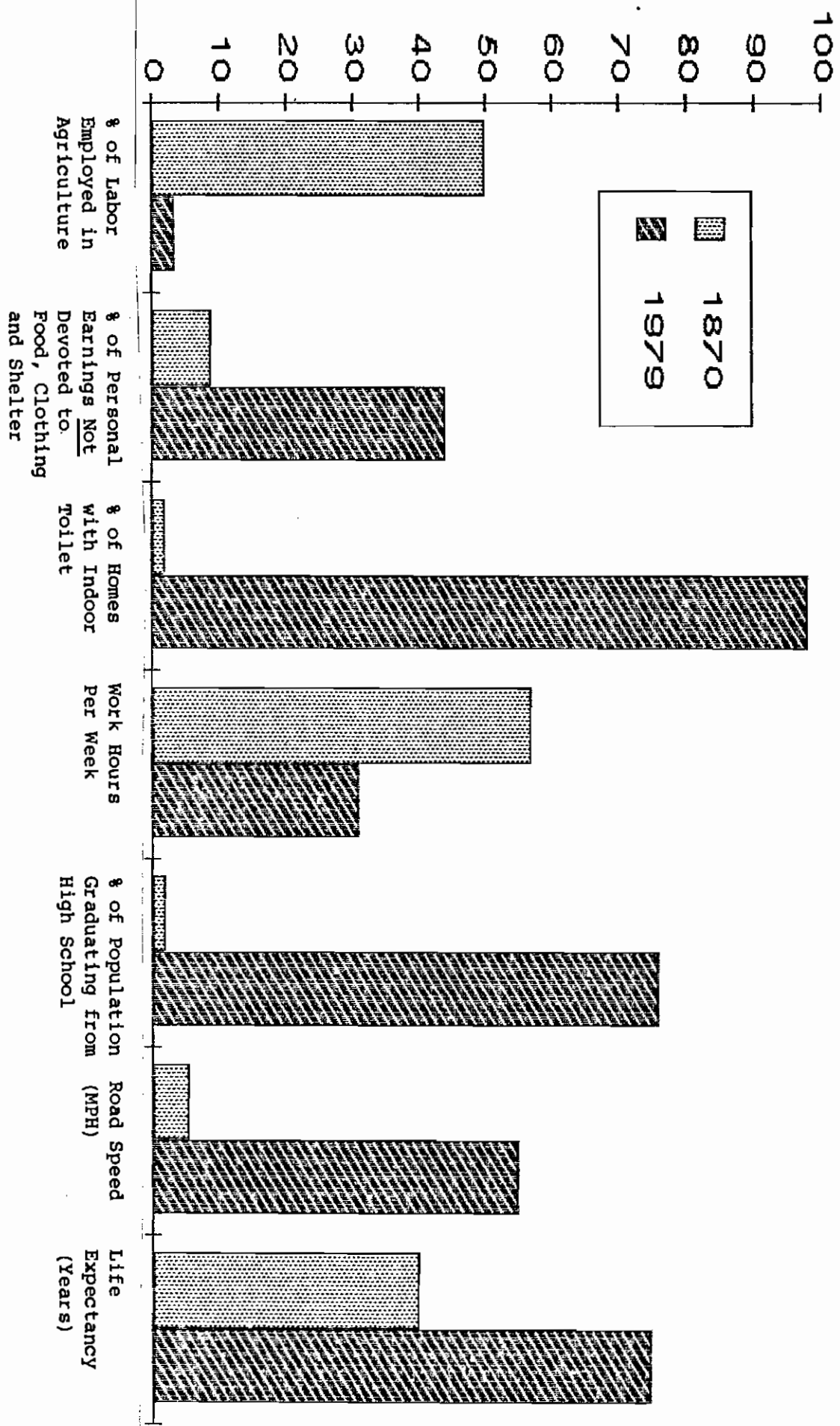
There was little knowledge in the 1800s about the means for prevention of the spread of epidemic disease. Absence of municipal cleanliness was a major public health problem and facilities for disposal of human wastes, animal manure, garbage and other household refuse were grossly inadequate. Garbage was thrown into the streets and alleys, and pigs and dogs, in cities as large as New York, served as scavengers (in some cities the scavengers were geese, and in many southern cities buzzards cleaned up the garbage). Slaughterhouses, livery stables, rendering plants, junk and manure heaps were unregulated; animals had the freedom of the streets in all but a few cities. The absence of regulation of food markets made for extremely unsanitary conditions.

Hardly an American city had an adequate sewage system. Even Boston, New York and Philadelphia had only partial systems whose conditions and operations were so poor that the stench from the inlets and outlets was almost intolerable. Streets were filthy more often than not with streetcleaning inadequate or completely absent. Everywhere, ordinary sanitary precautions were neglected, and mosquitoes, flies and other germ-harboring pests were regarded with equanimity.

## 12. Conclusions

The preceding account of the American standard of living one hundred years ago reads remarkably like a description of a contemporary, third world, less developed country, and recalls the comparison made early in the chapter: American per capita GNP in the mid 19th century just about matched that in present-day countries the majority of whose citizens struggle through a rude, hand-to-mouth existence in many ways medieval in its primitiveness. We have touched on a number of the components of the standard of living in this chapter, and have tried to show how economic growth has profoundly altered American lives. Figure 2 dramatically portrays a number of those changes, including share of the labor force in agriculture, percentage of personal income devoted to the basic requirements of food, clothing and shelter, work hours per week, and so on. Rising incomes and the fruits of the technological revolution have filled our lives with goods and services unavailable, and even unimaginable, a hundred years ago and, perhaps most important, the revolution has produced its most dramatic changes in the lives of the millions of ordinary working people. Today, virtually no American family is without electricity, or hot and cold running water, or an indoor toilet, or household amenities such as stoves, refrigerators, and vacuum cleaners. Televisions, automobiles, educated and healthy children, reasonably nutritious diets, freedom from the dreaded diseases of the past, the luxury of vacations and retirements years, and long life expectancy have all become part of the American standard of living. Indeed, the continual rise of real incomes and the constant parade of new consumer products have become commonplace phenomena. Among the items that have reached mass markets during the lifetimes of many of us are television sets, jet airplanes, tape recorders, video recorders, personal computers, microwave ovens and a host of others. Yet few people regard any of these

Figure 2  
Some Life Style Changes, 1870-1979.



with the wonderment that early in this century greeted the advent of electric lighting, the radio, and the automobile. Change has become so commonplace that we all have become blase about it. That is a striking departure from virtually anything that humanity has experienced before.

Appendix: Which Income Groups Gained Most from the Revolution in Living Standards?

Though benefits as spectacular as those that have been described in this chapter can hardly have left any income group in the American population untouched, they probably have not been distributed perfectly evenly. The evidence on their distribution is far from clear, and we can offer only a few suggestive observations on the subject.

Some observers have suggested that the very wealthy were those who gained the least from the increase in living standards. Rosenberg and Birdzell (1986) write:

"...Western economic growth...benefitted the life-style of the very rich much less than it benefitted the life-style of the less well-off....The very rich were as well-housed, clothed, and adorned in 1885 as in 1985....in fact, the innovations of positive value to the rich are relatively few: advances in medical care, air conditioning, and improvements in transportation and preservation of food."

(p. 27)

A primary consequence of mass production was to reduce the real cost of items previously beyond the means of any but the most affluent. As we have seen, variety in foods was once available only to the very rich. And only the very rich once possessed more than one or two changes of clothing, comfortable homes, or travelled for pleasure. Today all these things are widely enjoyed by members even of the lower middle classes. The homes of the wealthy today are not notably more elegant than those of 1870, nor is their clothing more luxurious. This is in sharp contrast to what has happened to the median American income group whose living conditions have undergone an improvement of revolutionary proportions. In terms of assistance in household tasks the middle and lower classes now have at their disposal a great variety of equipment -- washing machines, vacuum cleaners, refrigerators, and so on. The upper income groups, in contrast, may even be held to have lost out somewhat through the reduction in number of household servants even in the wealthiest of homes.

There is probably much truth to this evaluation, but it surely requires some additions and amendments. The first relates to the very poor, the miserable stratum of society that inhabits the most dreadful slums or is altogether homeless. Descriptions of nineteenth century tenements are indisputably horrifying, but who is to say whether they are matched by reports of vermin-infested slums of today, in which cracked walls cannot exclude the cold and legal heating requirements are regularly flouted. The inhabitants of those slums, it is true, are offered various forms of public assistance today, their children are entitled to schooling and medical treatment which would have been beyond anything their predecessors could have aspired to a century earlier. Yet, one can hardly muster confidence in an assertion that these most underprivileged members of our society are really better off today. The very increase in the relative standards attained by other income groups must surely increase the frustration and despair of those to whom the American dream is hardly even worth dreaming about.

The story, however, is even more complex than this reservation suggests. While it may be true that the very poorest, like the most wealthy, have gained relatively less over the course of a century, comparison with their status in the sixteenth and seventeenth centuries suggests that both these groups have gained a great deal indeed, at least over this longer period. To recognize what the poor have gained we need merely recall our earlier Section 4 on food consumption. Even welfare recipients today are hardly expected to subsist on the one bowl of gruel -- the cereal soup -- which, with rare exceptions (usually on holidays), was the universal food of much of the population in earlier centuries. Far more than that, the perpetual threat of famine which was likely to recur and cause widespread death by

starvation has disappeared in this country and other industrialized lands. The end of that spectre is economic progress indeed, even for the poorest members of the community.

Not only the poor, but the very rich have also gained much in terms of health and personal comfort in the course of two or three centuries. The evidence of genealogical records is remarkable in this regard. In the first quarter of the 20th century the average expected longevity at birth of a member of the British peerage (nobility), male and female, had reached 65 years. But in the two centuries following 1550 in the middle of the reign of the Tudors that figure was a mere 35 years. More remarkable, for that period the average longevity figure for peers was almost identical with that of the male and female population of England and Wales, despite the miserable living conditions of the bulk of the nation. It is also noteworthy that as late as the first quarter of the eighteenth century when the life expectancy of a British male peer at age 10 was a bit more than 39 years, that of an American male of age 10 was a bit more than 50 years (the full time series are depicted in Figure 3). Clearly, the health of a British nobleman several centuries ago still had a long way to go.<sup>18</sup>

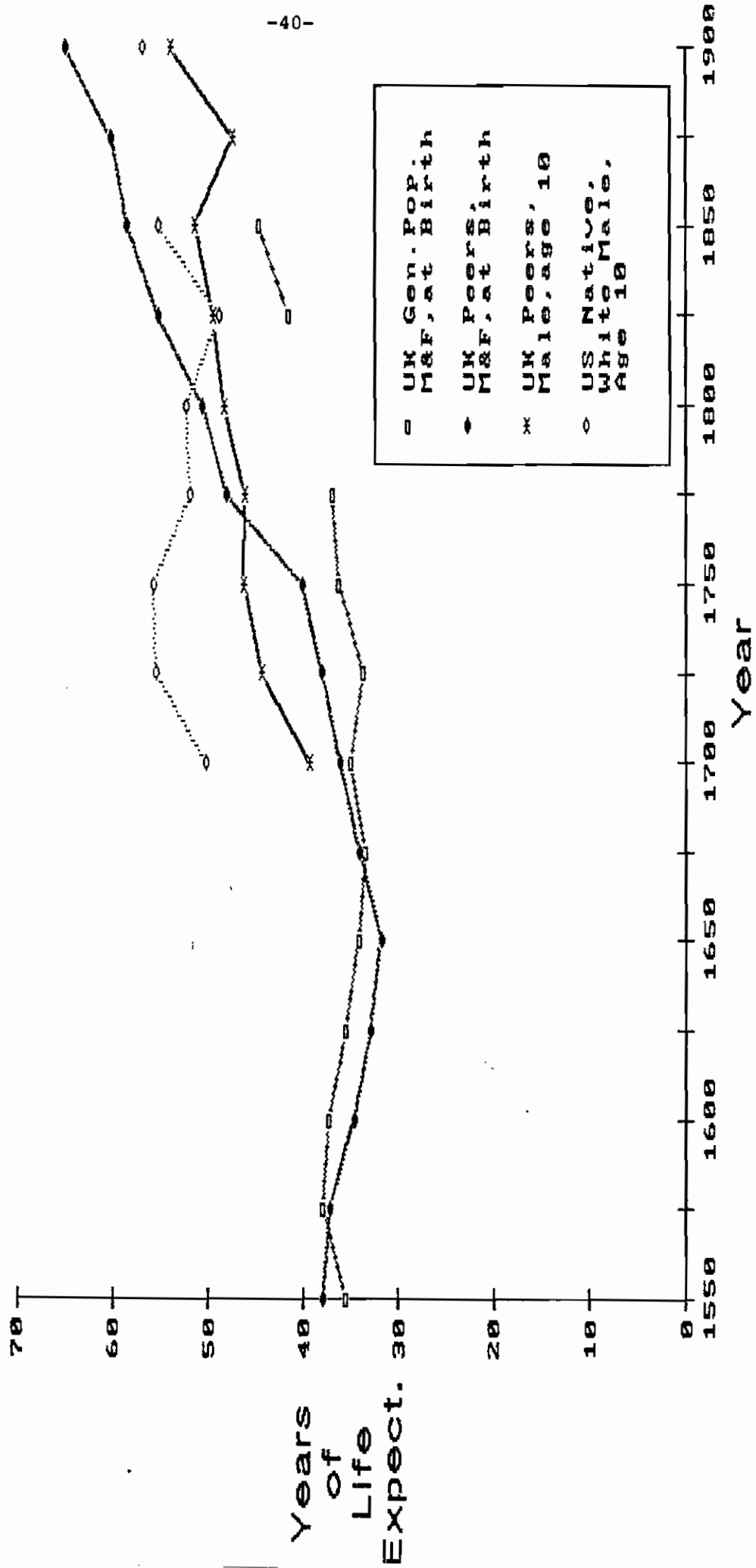
In terms of comfort the improvements of the circumstances of the rich is equally dramatic. We illustrate the change in terms of one one development: that in home heating technology. Before the early decades of the 18th century the role of the draft in fireplace construction had not been discovered. As a result the huge fireplaces in the homes of the nobles, though beautiful, were extremely ineffective as heating devices, roasting nearby persons on one side and freezing them on the other. As a result, as Braudel (1979) reports: "Cold weather, at that period, could be a public disaster, freezing rivers, halting mills (with little or no flour having been stored because preservation methods were largely unknown), bringing packs of dangerous wolves

out into the countryside, multiplying epidemics." (p. 299)

This affected the nobility as well. On this subject, historians like to cite the Princess Palatine (the German sister-in-law of Louis XIV, living in Paris and Versailles), who reports in one cold January that "...all entertainments have ceased as well as law suits." More remarkable is her report in February of 1695 that "(in the Hall of Mirrors at Versailles) At the King's table the wine and water froze in the glasses." One may note that matters began to improve for the wealthy in France during the period of regency (1717-1723) of the Princess Palantine's son, Philip of Orleans. (Braudel, 1979, p. 299)

Figure 3 suggests that in terms of health matters began to improve for the British aristocracy perhaps a few decades earlier and that since then the longevity of peers increased almost uninterruptedly at least until the beginning of the 20th century. Improvement for the bulk of the population of England and Wales waited about another century for its inauguration and the rate of ascent of their lifespan seems not to have attained that of the peers during the period for which data are reported by Fogel (1986). At least in that sense, then, the Industrial Revolution may have benefitted "the upper crust" even more than it did the population generally.

Figure 3  
**Life Expectancy, 1550-1900**  
**(at Birth or Age 10)**  
**Four UK, US Groups**



Source: Fogel (1986), p. 43.

Footnotes

\* Princeton University. \*\* Princeton University and New York University.

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1

"The minimum subsistence budget that was used to determine welfare payments in New York City in 1960 specified a set of material conditions for family life that would have been regarded as fairly luxurious in 1910 (much less 1860)...A four-person family was permitted to rent a five-room flat, so that each member of the family who wanted to could 'be alone in a room' -- a luxury inconceivable to most poor families earlier in the century. The flat was to be outfitted with a complete bathroom (hot and cold running water, toilet, bath or shower, and a sink), a complete kitchen (sink with a drain, hot and cold water, refrigerator, and a gas or electric range), and central heat. Plain but adequate furnishings were allowed (each person was to have a bed and a complete set of eating utensils) as well as annual replacement clothing for the children (shoes that fit, dresses that were new and not made over from hand-me-downs). The diet for such a family was not to contain luxurious foods such as steak, but did allow meat, milk, fresh fruits and vegetables to be served at least once a day. The family was also allowed an iron and a vacuum cleaner (although not a washing machine or a dryer) and linoleum (although not carpeting) to cover all the floors. That set of material conditions...regarded as deprivation in terms of the general standard applying throughout the country in 1960...was luxurious (compared to how people lived in the 19th century, and even earlier in the 20th)."

Cowan (1983, p. 194),  
citing Patterson (1981).

<sup>2</sup> Here we offer two words of caution: First, in this chapter, we present evidence on the vast improvements in material welfare since the 19th century. We do not make any judgments, however, about whether Americans are better off than their 19th century counterparts in other, less tangible ways. Who can say, for example, whether the mass exodus from farms to cities benefitted society

in its psychic state? And what price have Americans had to pay for their increased prosperity -- emotionally, culturally, environmentally? Second, it is clear that the improvements in material welfare have not accrued evenly across all income groups. Wealthy 19th century Americans already lived a life of luxury, and while they certainly participated in many of the gains of the 20th century (improved life expectancy and better medical care, plus all the technological wonders like air conditioning and jet airplane travel), they also lost some of the amenities which they enjoyed (for example, large staffs of personal servants; indeed, even middle-class 19th century families routinely employed a number of servants, such as laundresses, scrubwomen, and seamstresses). At the other extreme, the very poorest in America today have also benefitted from the increase in prosperity (for example, in medical care and certain other basic amenities like electricity and plumbing), but certainly have not participated fully in the huge improvements in material conditions that have accrued to the millions of middle and lower-middle class Americans. We explore this issue further in the Appendix to this chapter.

<sup>3</sup> A mechanic was a semi-skilled day laborer. Nettie's father made the family's living by subsistence farming, living off the land, and selling his services or handmade tools for money.

<sup>4</sup> In 1860 the New York Tribune wrote that it was rather above the mark to place annual earnings of skilled workers in New York City (such as journeymen mechanics and manufacturers) at \$400 (or \$3,367 1980 dollars) (Martin (1942), p. 410).

<sup>5</sup> Income figures for 1860 are from Martin (1942), p. 393. To convert 19th century incomes into 1980 dollars we spliced together two GNP implicit price deflator series: one series (U.S. Department of Commerce (1975), p. 224) ran from 1869 to 1970 (1958 = 100); the second series (Economic Report of the President (1984), p. 224) ran from 1929 to 1983 (1972 = 100). We first converted the second series to a 1958 baseline by dividing through by the 1958 deflator figure in that series. Then, in order to express incomes in 1980 dollars, we divided both series through by the 1980 deflator figure. The official U.S. poverty level for 1980 is taken from U.S. Department of Commerce (1982), p. 417.

<sup>6</sup> In 1899 per capita consumption of lard (animal fat) was 12.3 pounds, compared to 4.6 pounds per person in 1970 (U.S. Department of Commerce (1975), pp. 329-330).

<sup>7</sup> American abundance relative to European standards was not new in the second half of the nineteenth century. As we will see later in the chapter, there is evidence suggesting that Americans were better fed, and healthier, in earlier periods.

<sup>8</sup> The homes of well-to-do Americans were described by one British traveller as "tasteful and elegant," (Reid (1861)), and included such amenities as weighted sash windows, rainwater cisterns, lever-operated water closets, copper-lined bathtubs and showers, hot and cold running water, furnace heating (which could cost as much as a teacher's annual salary (Cowan (1983), p. )), gas lighting and elaborate Victorian furniture. Many of the residences of St. Louis were "costly and beautiful," (Dana (1857)) and in Westchester, New York, "Miles and miles of unmitigated prosperity weary the eye. Lawns and park-gates, groves and verandahs, ornamental woods and neat walls, trim hedges and well-placed shrubberies, fine houses and large stables, neat gravel-walks, and nobody on them" were to be seen (Willis (1853)).

<sup>9</sup> The statistics in the paragraph were taken from Martin (1942).

<sup>10</sup> Baydo (1982), p. 6 and Martin (1942), 432.

<sup>11</sup> TransAtlantic travel was certainly out of the question for all but the few wealthiest. An 1858 Harper's Weekly advertised a pleasure voyage on the Mediterranean aboard the steamer "Ericsson" for \$750 per person (or close to the annual income of the average urban Massachusetts family of five described in Section 3).

<sup>12</sup> Despite the advent of all the modern-day worksaving household amenities, such as indoor plumbing, electric washing and drying machines, vacuum cleaners, canned goods and ready-made clothing, some recent historical studies of housework have concluded that the time women spend on household chores has not decreased. Modern amenities have dramatically reduce the back-breaking drudgery of many household tasks, but have also created different sorts of housework. For example, Cowan (1983) points out that when gas stoves replaced wood-burning stoves, no longer did wood have to be chopped, split and carried in (tasks often performed by men and children) but the task of cooking remained the same or became even more difficult (since meals no longer were limited by the vagaries of wood stoves). In fact, the amount of time spent on cooking increased as women were expected to produce meals more complicated and nutritious than the one-pot stew dictated by more primitive stoves. Similarly, Caroline Davidson (1982), in her history of housework in the British Isles from 1650 to 1950, concluded:

...the spread of utilities and time- and labour-saving appliances did not have any discernable long-term effect on the average housewife's working hours. Time saved on one task was simply put to new use and the scope of housework redefined. A woman who saved an extra 45 minutes a day through the introduction of piped water into her house would use them to do more cleaning and washing. Similarly, a woman whose coal range was replaced with a gas stove would

cook more elaborate meals than she had previously, because it was so much easier. In this way, housework remained a full-time occupation for most women in 1950, just as it had been in 1650 (or 1750 or 1850). (p. 192)

Professor Cowan writes:

Thus, there is more work for a mother to do in a modern home because there is no one left to help her with it. Almost all the work that once stereotypically fell to men has been mechanized. Families tend to live a considerable distance from the place where the male head of the household is employed; hence, men leave home early in the morning and return, frequently exhausted, late at night. Children spend long hours in school and, when school is over, have "after school activities," which someone must supervise and from which they must be transported. Older children move away from home as soon as they reasonably can, going off to college or to work. No one delivers anything...to the door any longer, or at least not at prices that most people can afford; and domestic workers now earn salaries that have priced them out of the reach of all but the most affluent households. The advent of washing machines and dishwashers has eliminated the chores that men and children used to do as well as the accessory workers who once were willing and able to assist with the work. The end result is that, although the work is more productive (more services are performed and more goods are produced, for every hour of work) and less laborious than it used to be, for most housewives it is just as time consuming and just as demanding. (p. 201)

<sup>13</sup> The New York Times (1986), p. A19.

<sup>14</sup> Figures for Massachusetts in 1870-74, from U.S. Department of Commerce (1975), p. 57.

<sup>15</sup> Physical stature (height) is also a good measure of gains in the standard of living (and in fact may be a better measure than real wages or per capita food consumption). Heights are apparently a nearly foolproof measure of the nutritional status of a population, particularly the nutritional status of the infant and child population.

<sup>16</sup> As Scott and Wishy (1982) point out, "...even today, despite the use of vaccines, our annual 'flu' epidemics remind us mildly of the low odds against disease with which American families lived...." (p. 393).

<sup>17</sup> Well into the 20th century hospital wards were filled with tuberculosis, pneumonia, syphilitic heart disease, pneumococcal and streptococcal meningitis, typhoid fever, and other acute and, at that time, incurable microbial diseases. As late as the 1930s, "...the physician more commonly 'shared' in the agonizing process of waiting for 'nature to take its course' or in helping patients cope with illness that could not be modified medically...." (Rogers (1986), pp. 11-15).

<sup>18</sup> The data are reported and analyzed in Fogel (1986). Fogel offers some conjectures about the explanation of what he calls "the peerage paradox" -- the approximately equal life expectation of peers and commoners in the period noted. He suggests that many of the killer diseases of the period such as plague, malaria, smallpox, and typhus are affected minimally by nutrition, that cleanliness was not fashionable and that upper class diets of the period contained extraordinarily high quantities of substances (notably alcohol) toxic to the unborn or to the nursing child. Moreover, the aristocratic diet shunned healthful vegetable and cereal products which economic circumstances often forced peasants to eat (Fogel, pp. 64-70).

References

Altman, Lawrence K., "The Doctor's World: AIDS Recalls Earlier Time,"  
The New York Times, July 15, 1986, p. C3.

Baydo, Gerald R., editor, The Evolution of Mass Culture in America, 1877 to  
the Present (St. Louis, Mo.: Forum Press, 1982).

Beniger, James R., The Control Revolution: Technological and Economic Origins  
of the Information Society (Cambridge, Mass.: Harvard University Press,  
forthcoming).

Braudel, Fernand, The Structures of Everyday Life, The Limits of the Possible,  
Volume I, Civilization and Capitalism, 15th-18th Century (New York: Harper  
and Row, 1979).

Cowan, Ruth Schwartz, More Work for Mother, The Ironies of Household Technology  
from the Open Hearth to the Microwave (New York: Basic Books, 1983).

Dana, C.W., The Great West (Boston: Wentworth and Co., 1857), p. 140, p. 174.

Davidson, Caroline, A Woman's Work Is Never Done, A History of Housework in  
the British Isles, 1650-1950 (London: Chatto and Windus, 1982).

Economic Report of the President (Washington, D.C.: U.S. Government Printing  
Office, 1984).

Fogel, Robert W., "Nutrition and the Decline in Mortality Since 1700: Some Preliminary Findings," Working Paper No. 1402 (Cambridge, Ma.: National Bureau of Economic Research, July 1984).

Fogel, Robert W., "The Development of the American Economy," NBER Reporter, Fall 1985, pp. 1-6.

Fogel, Robert W., et al., "Changes in American and British Stature Since the Mid-Eighteenth Century: A Preliminary Report on the Usefulness of Data on Height for the Analysis of Secular Trends in Nutrition, Labor Productivity, and Labor Welfare," Working Paper No. 890 (Cambridge, Ma.: National Bureau of Economic Research, May 1982).

Furnas, J.C., The Americans, A Social History of the United States, 1587-1914 (New York: G.P. Putnam's Sons, 1969).

Gilmore, James Roberts (Edmund Kirke), Among the Pines (New York: G.P. Putnam, 1862).

Heim, Peggy, "Living Conditions of a Mechanic's Family in Rural Pennsylvania, 1885 to the Early 20th Century," mimeo 1985.

Howard, Ronald L., A Social History of American Family Sociology, 1865-1940 (Westport, Ct.: Greenwood Press, 1981).

Lebergott, Stanley, The Americans: An Economic Record (New York: W.W. Norton, 1984).

Maddison, Angus, Phases of Capitalist Development (New York: Oxford University Press, 1982).

Martin, Edgar W., The Standard of Living in 1860 (Chicago: University of Chicago Press, 1942).

Mitchell, Wesley C., The Backward Art of Spending Money (London: McGraw-Hill, 1937); reprinted from American Economic Review, Vol. II, June 1912, pp. 269-281.

Montgomery Ward and Company, Catalogue and Buyers' Guide, No. 57, Spring and Summer, 1895 (unabridged facsimile published by Dover Publications, New York, 1969).

Morrison, Joan and Charlotte Fox Zabusky, American Mosaic: The Immigrant Experience in the Words of Those Who Lived It (New York: E.P. Dutton, Inc., 1980).

Patterson, James T., America 's Struggle Against Poverty, 1900-1980 (Cambridge, Mass.: 1981).

Reid, H., Sketches in North America (London: Longman, Green, Longmont, and Roberts, 1861).

Rogers, David E., "The Early Years: The Medical World in Which Walsh McDermott Trained," Daedalus, Spring 1986 Issue on America's Doctors, Medical Science, Medical Care, Vol. 115, No. 2, pp. 1-18.

Rosenberg, Nathan and L.E. Birdzell, Jr., How the West Grew Rich, The Economic Transformation of the Industrial World (New York: Basic Books, 1986).

Scott, Donald M. and Bernard Wishy, editors, America's Families, A Documentary History (New York: Harper and Row, 1982).

Sears, Roebuck and Company, 1908 Catalogue No. 117 (replica published by BDI Books, Inc., Northfield, Ill., 1971).

Sears, Roebuck and Company, 1985 Spring and Summer Catalogue.

Smithsonian Institution, 1876 Culinary Exhibit (display description, 1986).

The New York Times, "U.S. Gain Is Found in Health Report," January 31, 1986, p. A19.

U.S. Bureau of Labor Statistics, "Family Budgets," Monthly Labor Review, January 1980, pp. 44-47.

U.S. Department of Commerce, Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970, Part 2 (Washington, D.C.: U.S. Government Printing Office, 1975).

U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States, 1982-83 (Washington, D.C.: U.S. Government Printing Office, December 1982).

Wells, Robert V., Revolutions in American's Lives (Westport, Ct.: Greenwood Press, 1982).

Willis, Nathaniel Parker, Hurry-Graphs; or Sketches of Scenery, Celebrities, and Society, Taken From Life (Auburn: Alden, Beardsley, and Co., 1853), p. 130.

Kolbert, Elizabeth, "Household Chores, Still Never Done," The New York Times, December 5, 1985, pp. C1 and C12.

Fogel, Robert W., "Nutrition and the Decline in Mortality Since 1700: Some Additional Preliminary Findings," Working Paper No. 1802, National Bureau of Economic Research Working Paper Series, Cambridge, Mass., National Bureau of Economic Research, January 1986.