

The Industrial Revolution

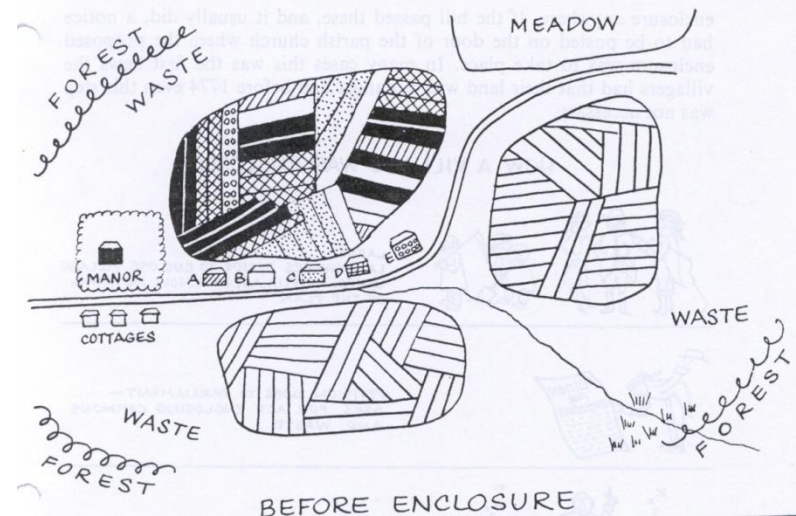
Agriculture

Agricultural Revolution

- Before the Industrial Revolution (IR) could occur an Agricultural Revolution had to occur first
- Agricultural Revolution
 - A change in the way food is produced
 - Increases crop yields
 - Requires fewer people to grow food

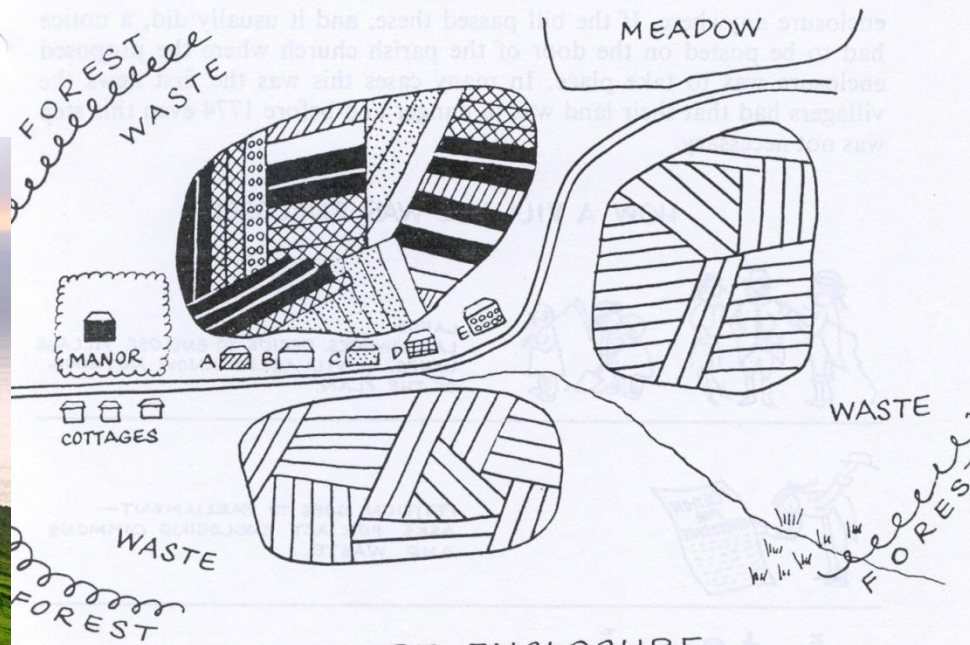
- WHY?
- Before IR most people subsistence farmed
 - Small farms
 - Shared common land
 - Yields poor
- For IR to occur a labour force must be available
 - Need new methods to grow more food by fewer people
- 1600-1800s
- New farming methods/technologies developed
 - Improves yields

- Enclosure (mostly late 1600s - 1800)
 - Small strip farms turned into larger farms
 - Fences built
 - separate farms/fields
 - common land sold to wealthy land owners
 - farming became a business
 - forced poor people off farms
 - Fewer people needed to farm and feed the population
 - Created unemployment
 - Many moved to cities looking for work



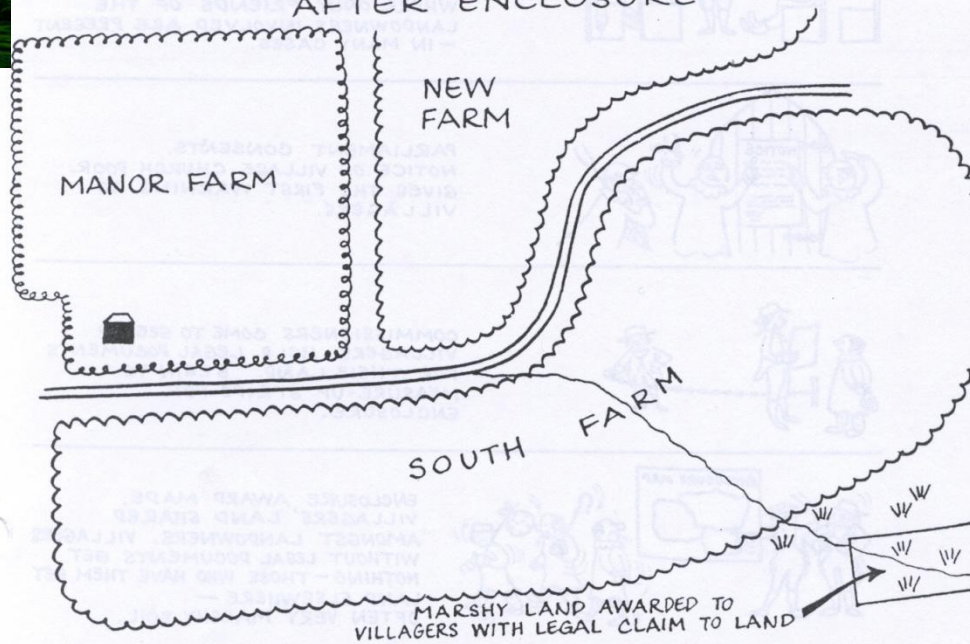
- Advantages

- 1/3 more land could be farmed each year
- More food produced each year
- Surplus animals need not be slaughtered in the fall
 - Used turnips to feed them during winter



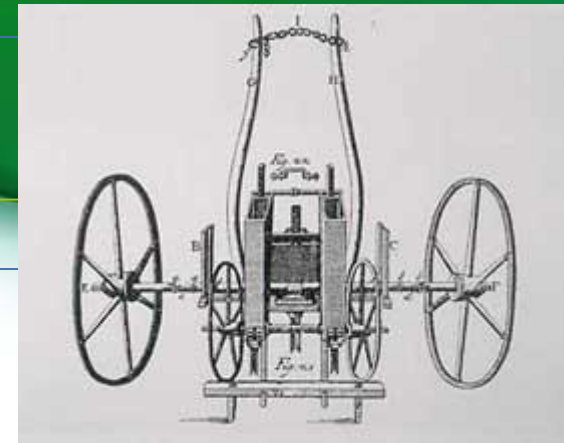
BEFORE ENCLOSURE

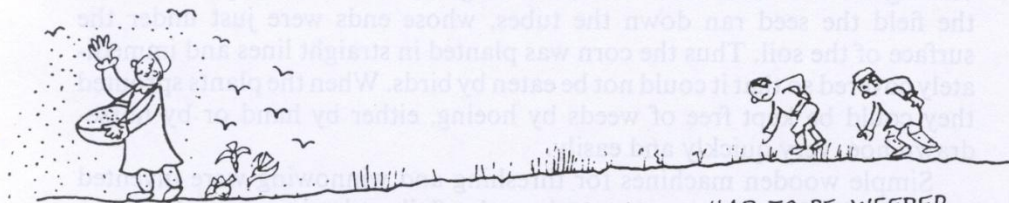
AFTER ENCLOSURE



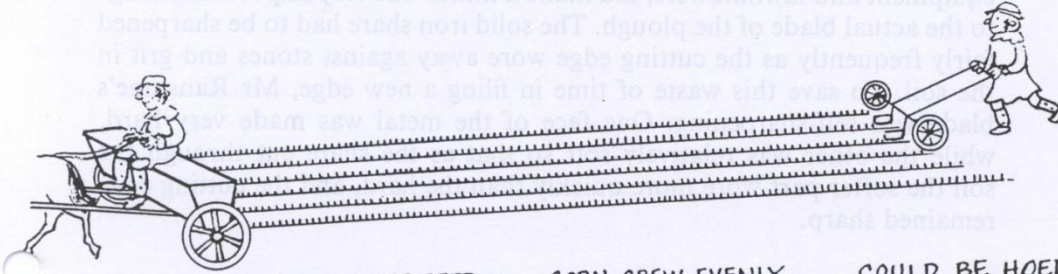
Jethro Tull

- English Farmer
- Invented Seed Drill in 1701
 - Dug hole
 - placed seeds in even rows with space between each row
 - Covered seeds with dirt
- Invented Horse Hoe
 - Hoe pulled by horses
 - Helped in fertilizing
- **Advantages**
 - Faster
 - Uses less seed
 - Seed not blown/washed away
 - Birds do not eat seed
 - Fields plowed more quickly
 - ***Increased yields***



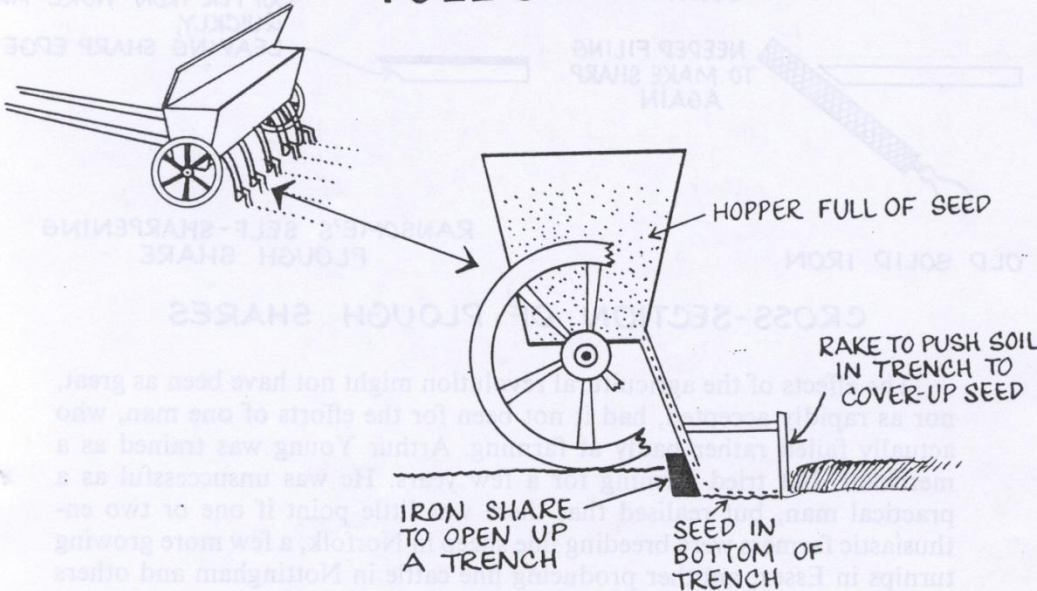


BROADCAST SOWING ----- MUCH EATEN BY BIRDS ----- UNEVENLY SOWN ----- HAD TO BE WEEDED SLOWLY BY HAND



TULL'S DRILL ----- BURIED THE SEED FROM BIRDS ----- CORN GREW EVENLY IN STRAIGHT ROWS ----- COULD BE HOED TO KILL WEEDS.

TULL'S DRILL



Charles Townsend

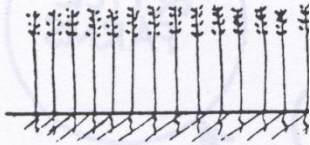
- **Changed Crop Rotation (Norfolk System) – end 1600s**
 - Popularized in Britain by Charles Townsend
- **4 Field system**
 - Fields did not have to be fallow (left empty) if crops rotated every year
- Each crop took or put different chemicals from/into the soil
 - Kept soil fertile
 - One special crop was Turnips



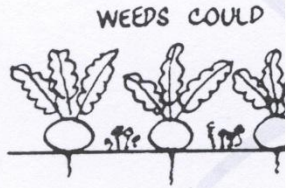
THE FO

THE EFFECTS OF BETTER SOIL

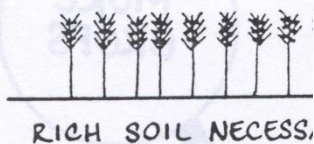
1750



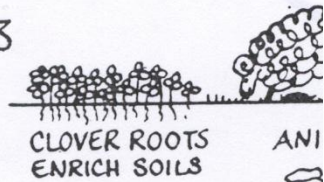
1751



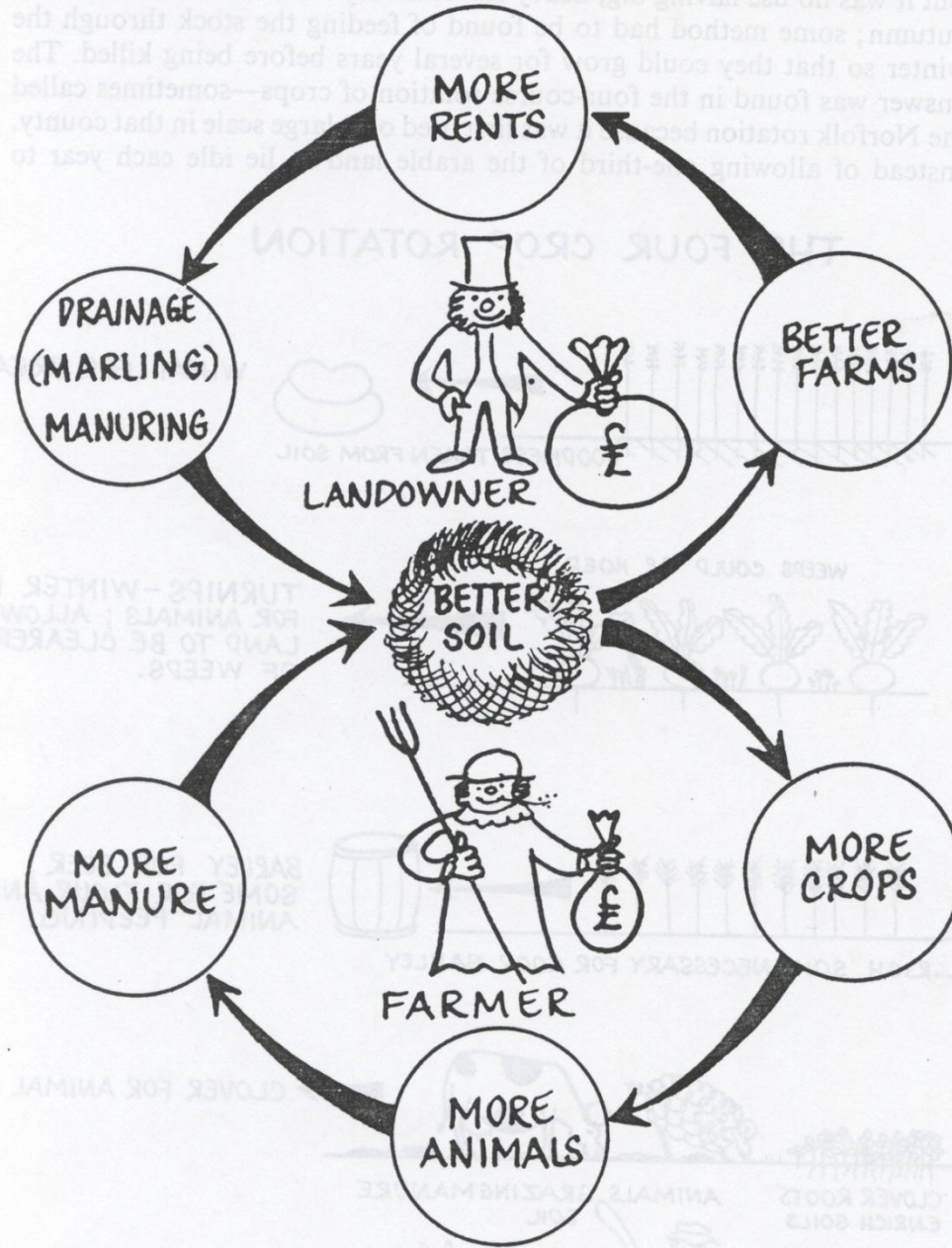
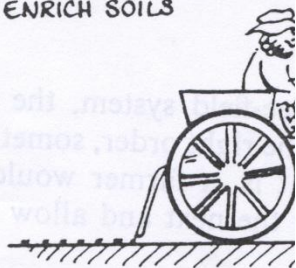
1752



1753

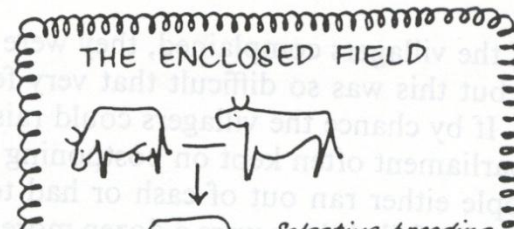
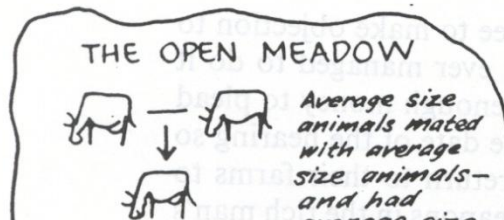


1754



Robert Bakewell

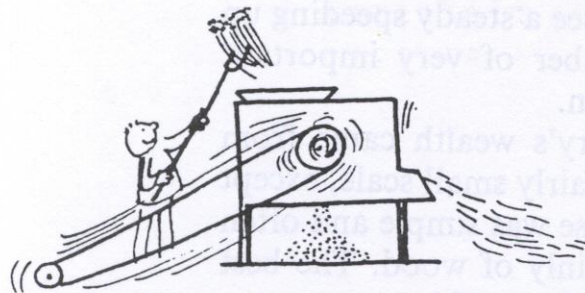
- Improved animal breeding
 - Focused on cows and sheep with better forms of meat for consumption
 - Wanted animals to put on flesh as soon as possible
- Advantages
 - Animals grew faster
 - Animals grew larger
 - More food available
 - More manure for crop fertilization



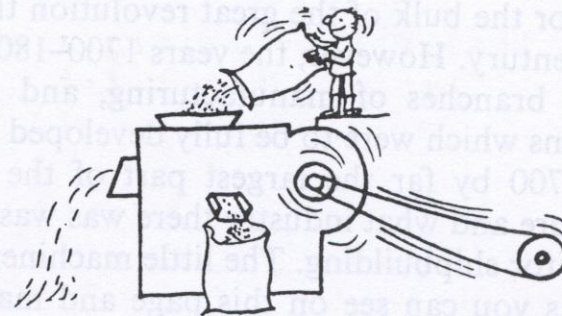
FLAILING



WINNOWING

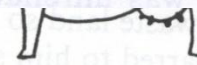
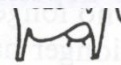


THRESHING MACHINE
1786



WINNOWING MACHINE
1777

CATTLE



SHEEP



1700

1800

TODAY

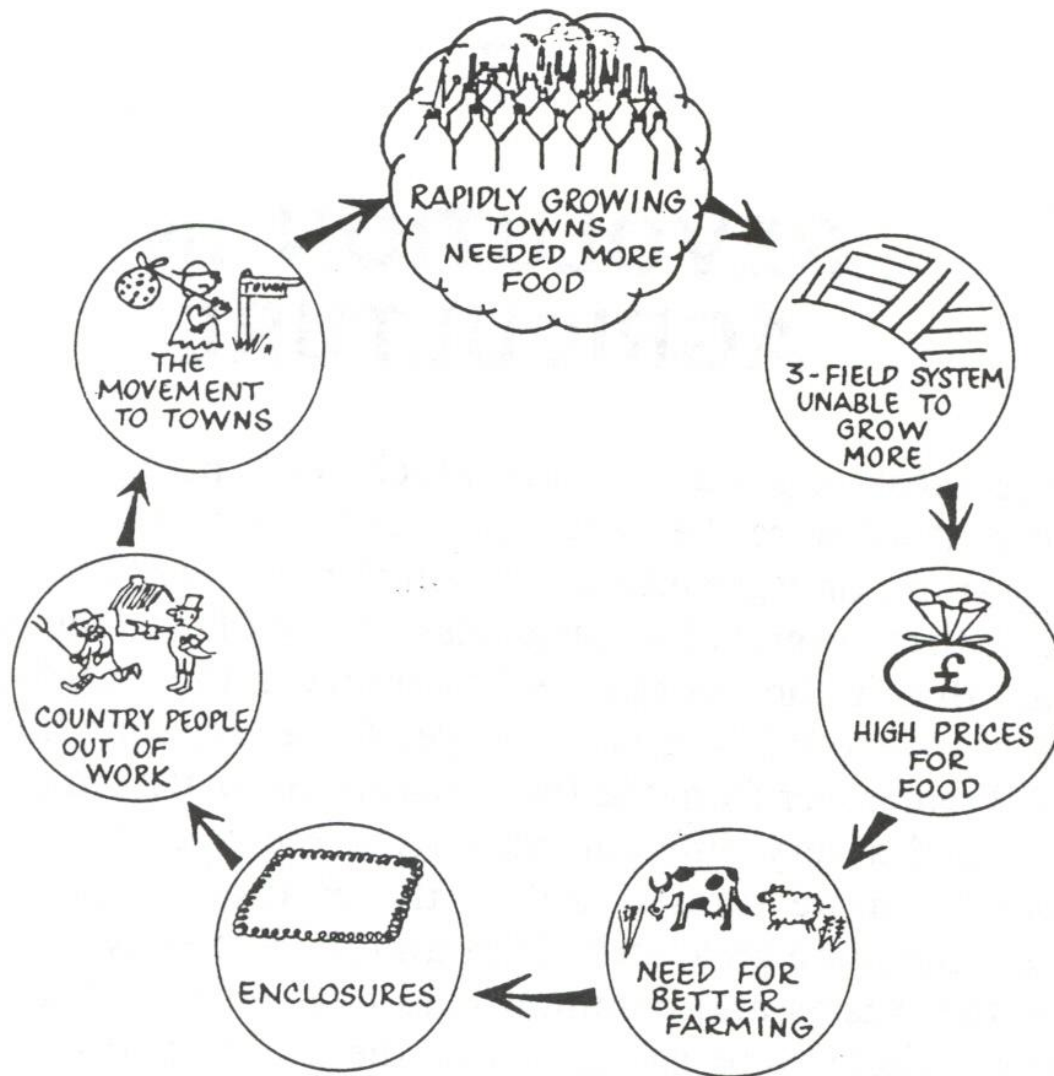
12 kg

36 kg

UP TO 70 kg
BUT USUALLY
SOLD
£5 - 50 kg

Effects of the Agricultural Revolution

- More Food Available
- Better Nutrition
- People are healthier
 - Live longer
- Population Grows
- Fewer Farmers Needed
 - Farmers out of jobs
- People move to cities looking for jobs
 - Created an urban labour force



Changes in Rural/Urban Population, 1800-1990

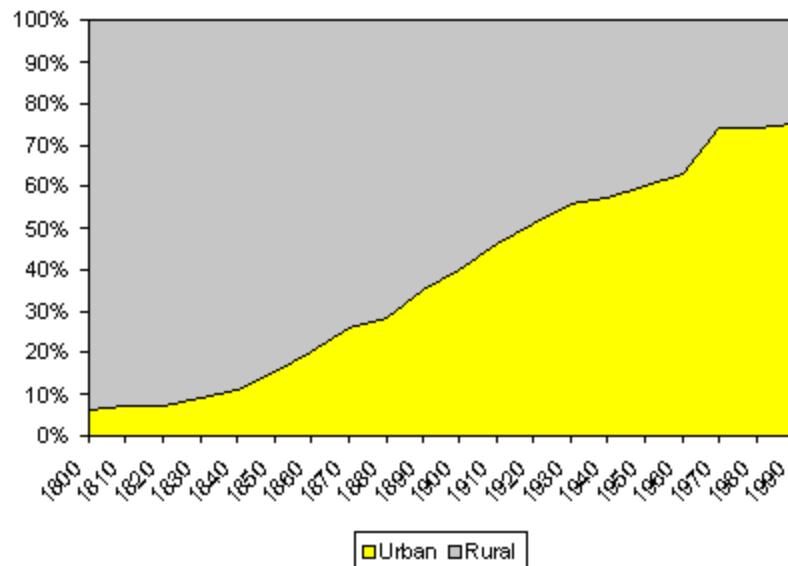


Figure 21.

The Population of England Fit with a Bi-logistic Growth Model, 1541-1975

