Stu's Notes #7

Stu's Notes provide selected passages from books that are of interest to Stu. They are primarily direct quotes, though some longer passages are summarized. They do not generally provide a thorough synopsis of the book. Rather, they capture individual facts or opinions of interest, which may or may not be reflective of the overall text.

Title:	**The Party's Over: Oil, War and the Fate of Industrial Societies**
Author:	Richard Heinberg
Publisher:	New Society Publishers
Published:	2003
Stu's Notes:	2005 July 11
Summary:	*Makes the case that there will be severe and traumatic societal disruption as a result of the imminent peak of global oil production.*
Highlights:	Saudi saying [Chapter 3]
	Kenneth Boulding quote [Chapter 5]
	George W. Bush quote [Chapter 5]
	Food and agriculture [Chapter 5]

Chapter 3: Lights Out: Approaching the Historic Interval's End

"We've embarked on the beginning of the last days of the age of oil." Mike Bowlin, Chairman and CEO, ARCO, 1999.

"My father rode a camel. I drive a car. My son flies a jet airplane. His son will ride a camel." Saudi saying.

A key publication by Colin Campbell was "The End of Cheap Oil", March 1998, *Scientific American*.

Names to watch for [p.92-102]:

- Colin J. Campbell, ASPO.
- Kenneth S. Deffeyes, wrote book "Hubbert's Peak: The Impending World Oil Shortage", 2001. Estimates peak in 2003, and total eventual oil recovery of 2.12 trillion barrels (but doesn't commit to a specific date, due to uncertainties re OPEC reserves and production capacities).
- L. F. Ivanhoe, founder, M. King Hubbert Center for Petroleum Supply Studies, Colorado School of Mines. Wrote paper "King Hubbert – Updated", 1997. Predicts peak around 2010.
- Walter Youngquist. "Geodestinies: The Inevitable Control of Earth Resources over Nations and Individuals", 1997.
- L. B. Magoon, geologist with USGS.
- Matthew Simmons, founder, Simmons & Company International.

Chapter 4: Non-Petroleum Energy Sources

Conservation: Efficiency and Curtailment

Curtailment = consume less (e.g., turn off a light when leaving a room)

Efficiency = get the most out of what we do use (e.g., replacing an incandescent bulb with a compact fluorescent bulb)

Efficiency

In the 1950s, the US economy as a whole used over 20,000 BTU for every inflation-adjusted dollar of GDP; by 2000, it was consuming only about 12,000 BTU per dollar. This was achieved through more efficient appliances, better insulation, more efficient industry, etc. Between 1980 and 1995, the fuel efficiency of US automobiles improved dramatically, but has since declined as people started buying bigger cars.

But the energy costs of retooling or replacing equipment and infrastructure can sometimes wipe out the gains. More than half of the energy consumption attributable to each vehicle on the road occurs in the manufacturing process.

Chapter 5: A Banquet of Consequences

"Anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist." Kenneth Boulding, ca. 1980.

"We need an energy bill that encourages consumption." George W. Bush, 2002.

Transportation

Asphalt incorporates large quantities of oil

"[w]hile a single automobile uses over 5,000 BTUs per passenger mile, a train carrying 19 people uses about 2,300 and a bus carrying the same number only about 1,000," from "Divorce Your Car!: Ending the Love Affair with the Automobile", Katie Alvord, New Society, 2000, p.165.

Food & Agriculture

Sine 1940, productivity of US farmland has grown at an average rate of 2% per year. Overall, global food production approximately tripled during the 20th century, just keeping pace with population growth.

Tractors and other farm machinery burn diesel fuel or gasoline; nitrogen fertilizers are produced from natural gas; pesticides and herbicides are synthesized from oil; seeds, chemicals, and crops are transported long distances by truck; and foods are often cooked with natural gas and packaged in oil-derived plastics before reaching the consumer.

Traditional forms of agriculture produced a small solar-energy surplus: each pound of food contained somewhat more stored energy from sunlight than humans, often with the help of animals, had to expend in growing it. … Today, from farm to plate, depending on the degree to which it has been processed, a typical food item may embody input energy between four and several hundred times its food energy.

Today in North America, food travels an average of 1,300 miles from farm to plate.

A carnivorous diet is inherently more energy-intensive than a vegetarian diet.

How many people will post-industrial agriculture be able to support? … A safe estimate would be this: as many people as were supported before agriculture was industrialized – that is, the population at the beginning of the 20th century, or somewhat fewer than two billion people.

Two reasons why we might do better than this:

- Organic approach: no chemical inputs, grow food closer to consumer, reduce monocropping to support biodiversity. In some studies, the organic approach has led to increased yields. (Nicholas Parrott and Terry Marsden, "The Real Green Revolution: Organic and Agroecological Farming in the South", p.62, online, Greenpeace, 2002, www.greenpeace.de

- Genetic engineering approach: crop varieties that out-produce older ones, grow in salty soil, or yield more nourishment.

Or we might do worse than two billion, since croplands have been degraded, traditional locally-adapted seed varieties have been lost, farming skills have been forgotten.

The amount of nitrogen available has been vastly increased by the Haber-Bosch ammonia synthesis process, which is currently dependent on fossil fuels. [It] could be accomplished with hydrogen, which could in turn be produced with hydroelectric hydrolysis; but the infrastructure for such production is currently non-existent.

Heating and Cooling

Currently in the US, according to the Energy Information Administration, residential energy use accounts for 21% of the total national energy consumption. Of this, 51% is for space heating, 19% for water heating, and 4% for air conditioning. The rest powers lights and appliances, including refrigerators.

In an average year in the US, 770 people die from extreme cold and 350 from extreme heat; combined, these figures exceed the average combined death tolls from hurricanes, floods, tornadoes, and lightning.

Food refrigeration will become more costly. There will be a decline in frozen goods, and produce will remain fresh for shorter time periods.