

**OIL DEPLETION AND HEALTH  
FURTHER NOTES TO AN OPEN LETTER TO MEDICAL PRACTITIONERS AS WELL AS TO THE  
GENERAL PUBLIC**

**Deterioration since Burnet wrote Dominant Mammal:** - As noted above, in DSP's open letter, the situation has deteriorated considerably since Burnet wrote *Dominant Mammal*<sup>1</sup> in 1970. In particular, depletion of Australia's and the world's natural resources of fossil fuels, topsoil, fresh water, forests, fisheries, diversity of species and easily-mined minerals has accelerated considerably. We realise that

1. It was an opportunity lost that the very great foresight Burnet showed in 1970 was almost completely ignored, and that remedial action was not taken as soon as possible after 1970.
2. Basic to this oversight by his medical colleagues and the general public at that time was the enormous economic boom from around 1950 to the early 1970s, enabled of course by the massive subsidy from fossil fuels. The worldwide boom encouraged many to believe that humans now had the means to progress to something like a future utopian existence. For example there was full, or almost full employment in developed countries, so that almost anyone could resign from one job and with relative ease obtain another very soon. Nuclear energy from nuclear **fission** was presenting some problems, but energy from nuclear **fusion** at that time was considered a likely substitute.
3. Thus it was commonly believed that *cheap energy would be available for ever for everyone*.
4. The future looked so rosy that even the concerns of an eminent scientist such as Burnet could be ignored.
5. Today, the news media uncommonly deal with the material on overpopulation and depletion of natural resources. Thus, if the media **does** deal with the issue of population, the material almost always suggests that there are *benefits from increased population*, reflecting the biased interests of say, the real estate industry. The real estate industry, and other business interests, in the absence of scientific evidence to the contrary, always or almost always *promote population growth*. The media always desire to sell more newspapers, and thus also commonly promote high immigration and high fertility levels.

**The threat of terrorism is relatively small:** -Today there is a threat of terrorism, but this threat is *small* compared with that of the *threat of the depletion of oil and gas*. As noted above, oil depletion in the next decade or soon after is *likely to lead to the considerable fall in Australia's standard of living*. *Unless this is managed very soon and very well, there could be collapse of health services and consequent deterioration of the health and well being of the Australian population.*

The problems of oil depletion together with the recent words of The President of the World Bank, Australian James Wolfensohn<sup>2</sup> make for deep concern:-

## No peace without hope

By Roy Eccleston in The Australian  
04 February 2004

JAMES Wolfensohn, the 70-year-old Australian who heads the World Bank in Washington, DC, sounds like a worried man. The world, says the wealthy former investment banker, is out of kilter.

The rich minority on the planet live for today and don't see the deluge of impoverished people about to descend on them during the next 30 years. The world's developed countries spend vast amounts on arms but only a fraction on aid...

All these things add up to poverty and despair for many of the 5 billion people in the developing world, and help fuel terrorism and extremism...

If a Martian were to land here, Wolfensohn mused recently, it would report home that this planet is crazy.

Still, when your job is to try to lift 5 billion poor people out of poverty -- through targeted development projects, advice, or perhaps fairer world trading rules -- it's no surprise that at times the weight of the world can seem to be on your shoulders...

"The three things are linked," Wolfensohn argues. There are 5 billion people in the developing world, 3 billion earning under \$US2 a day, and 1.2 billion earning under \$1 a day. "If you can't give them hope, which comes from getting a job or doing something productive, giving them their self-respect, these people become the basis on which terrorists or renegades or advocacy groups can flourish. It's an essentially unstable situation."

Nor is it just Arabs. Jews would be just as angry, so would Christians in poverty. "And we now have 2.8 billion people under the age of 23, 1.5 billion under the age of 15..."

"If you cannot deal with the question of hope or economic security, there is no way that with military expenditure you can have peace. I think you could spend \$US2 trillion on military expenditure, but if you do nothing about poverty and development you're not going to have stability."

"So my message is a simple one: You cannot take your eye off the ball of poverty -- and I hope that's a view Australia will also take..."

**The central problems:** - As noted above, the *central problem* is overpopulation, with most people dependent on cheap oil, and a fossil fuel economy which, in spite of intensive efforts and improved modern technology, sees only one or two barrels of oil now being discovered for every four barrels of oil being consumed. What makes the situation even more difficult is that the new oil discoveries are often relatively inaccessible, for example in very deep water. They are relatively expensive in dollars and energy to extract, so the rate of Energy Return On Energy Invested (so called EROEI), is now becoming much less.

Highly respected oil geologists such as Colin Campbell<sup>3,4</sup> and Richard Stanton<sup>5</sup> are saying that *peak extraction rates of oil ('Peak Oil')* could occur at any time in the next decade (2005 to 2015). In a relatively short period after peak oil extraction, a *steadily rising price of oil* can be expected to put steadily increasing strains on national economies and on the global economy. All government functions, including financing *vital health services* will almost certainly be *cut with increasing severity*.

Further notes on the inadequacy of today's knowledge of renewable energy sources:-

**Dangers of persisting with nuclear fission energy include the following6: -**

**a) Fuel: - Abundant fuel will only be available if we use fast-breeder reactors to produce plutonium, one of the most toxic substances known, and which is used to make nuclear weapons. Only a few fast breeder reactors have been constructed and these have proved to be prohibitively expensive, largely due to their special safety systems...they are susceptible to serious fires and long shutdowns: - The French Superphoenix reactor operated for less than one year during the first ten years after it had been commissioned...**

**b) Uranium, the fuel for conventional reactors is mined, but exists in finite quantities. Most deposits are low-content ores, mining is relatively inefficient and the mining process is potentially polluting and sometimes dangerous.**

**c) Much of the energy needed to mine uranium currently comes from oil. As petroleum becomes scarce and expensive, the mining process will likewise become more expensive. Thus, if the whole fuel cycle is taken into account, nuclear power produces several times as much CO2 as renewable, alternative energy sources.**

Further notes on the **problems of nuclear energy include** the consideration of fusion power which has not advanced in spite of many years of very expensive research, so that it would appear unwise to rely on fusion power. A major problem is that fusion power requires temperatures in the range of

two million degrees Centigrade or more, and of course, no containment system can withstand such temperatures.

**Hydro power** constitutes the world's largest renewable energy source, about 7 per cent world wide. However, most countries, such as the USA have already thoroughly exploited their hydro power and hydro power provides today only three per cent of the United States' electricity generating capacity.. As well, many hydro dams create major problems. These include high cost, silting-up, flooding productive agricultural land, displacing people, and decreasing valuable diversity of species, especially in migrating and spawning fish populations.

A superb illustration of just how difficult it will be in the two decades ahead when the oil depletion is really beginning to bite hard, is well illustrated in the following email from a friend, Jill Curnow<sup>7</sup>, who lives in a part of New South Wales remote from an electricity grid, where she and her partner are unable to obtain power from the grid: The email is self-explanatory, reproduced here with permission from Jill:-

*"Hello Everyone, ELECTRICITY FROM THE WEATHER, in response to various postings on this topic: -*

*"Our house obtains all its electricity from solar panels. These were installed because the grid proved difficult to connect.*

*"The average house in NSW uses about 20 kWh of electricity per day.*

*"We have at our disposal a maximum of 2 or 3 kWh per day. The batteries will store supplies for about a week.*

*"The system cost \$17,000 in 1996. Panels were from BP solar and they produce less in hot weather.*

*"I find no evidence in support of arguments that it is easy or reliable to produce electricity from the weather. On cloudy days in winter our system may produce only 10 or 20 amp-hours per day (about one quarter of one kWh), not even enough to run the inverter. It is therefore important that we use no electricity at all for as many hours as possible. Simply never turning anything on is the best. Such weather can be almost continuous for several weeks. Without fossil fuel for a generator we would be truly in the dark.*

*"We do not have a wind generator and at first considered installing one. But we kept a record of how many cloudy days were windy. Very few. Not worth the investment.*

*"After eight years of experience with this we have no respect for any suggestion that a transition to renewable energy will be anything but extremely difficult. (PT my emphasis)*

*"We reach this conclusion without even considering the energy ratio input/output. In other words, does our system in its lifetime yield as much energy as was needed to produce and install it? Will such systems be available when fossil fuel is gone? I do not know.*

*"Similar comments can be made about hydrogen, ethanol and methanol. The only people I know with confidence in these are people who have not made a study of the subject. (PT my emphasis)*

*"Renewable energy supplies certainly 'work'. They can be used. The problem arises when we hope they will enable our society and economy to function as it does with fossil fuel. All the evidence of which I am aware suggests that the depletion of fossil fuel, particularly oil, will have a greater effect on more people than any other event in history. (PT's emphasis)*

*Jill Curnow (19.05.04)"*

End of Jill's letter: Very disturbing news for many<sup>7</sup>!

**Modern agriculture hugely dependent on oil<sup>6</sup>:** - Of great concern is the dependency of modern agriculture on cheap oil and the success of modern agriculture is critical to feed the extra 4 billion people who have appeared on Earth since the 1950s. There is no suitable, economical energy type to replace oil for the tractors, harvesters and trucks, or for the manufacture of nitrogenous fertilizers, pesticides and herbicides, as well as for the delivery of water for irrigation.

**The future for economic growth<sup>6,11,12</sup>:** - The outcome of high resource consumption by modern humans is that the growing shortage of non renewable energy sources (and in particular oil) will pose is that every nation has a population level and a living standard that is only supportable through its use. Even more strange is the explicit support for the continued growth of some nations' population, (notably Australia's, aided and abetted by Government policy) when this is only possible through the subsidy provided by cheap non-renewable energy (oil).

**Scientists response:** - Typical responses [of people with a good knowledge of the contemporary scientific evidence] to this information on overpopulation and oil depletion are as follows<sup>6,10</sup>: -

*"Back in 1989 I became deeply depressed when I concluded that ...my children will likely suffer. That really hurt." .....* Richard Duncan, Institute of Energy and Man, Seattle, USA. Duncan's website is impressive, especially his figure 4: - <http://dieoff.com/page224.htm>

And

*"Everyone I have met who understands population and resource issues comes to the same conclusions and has to deal with the same emotional response – which typically run the gamut from shock, denial, despair and rage to eventual acceptance – and a determination to do what ever is possible to help avert the worst of the likely impacts."<sup>5</sup>*

Building a far better world: -A central point of DSP's outlook is that while a much lower population of Australia and the world must be achieved, we can hope that a far better world can be attained in time. This will require careful planning to eliminate the misery which that prominent Australian, World Bank President Wolfensohn, describes as noted above: - In today's world, some 3 billion people live in the squalor of less than \$2 a day, while a total of five billion live in poverty.

Burnet's plan for the future must be actioned and a central part of his aim is that all children achieve the full development of their intellectual and manipulative skills. This can only occur with adequate resources, but with careful family planning, there would seem no reason why it should not be achieved.

With the help of doctors' associations around the world, it should be possible to have a better world in *even a few decades*. That time frame was proposed to the world by President M'Beeki of South Africa at the 2002 world conference on population held in Johannesburg.

Features contributing toward this "better world" would be:-

- 1) One-child families would appear essential for as long as it takes to build a sustainable world for humankind i.e. for one or two generations.
- 2) Every child should have the prospect of being loved and wanted.
- 3) It must be accepted by all prospective parents that they will not intentionally conceive a child unless that child can be offered full development of his/her intellectual and manipulative skills.
- 4) Energy restriction will mean an immense change in lifestyles, for example in distance travel, but American engineer John Howe from cool climate Maine says: - "In many ways, this ...will improve our quality of life<sup>11</sup>."

Economic growth for growth's sake must be countered and new economics of steady state economics established.<sup>6,11,12</sup>

## **IN SUMMARY:-**

**1) Oil depletion:** - The problem of greatest urgency is the imminent peak of oil production which, if not managed well, will soon be followed by destabilisation of the world economy. The massive energy subsidy of fossil fuels has been increasingly relied upon by human populations for about 250 years, i.e. from the commencement of the Industrial Revolution, but especially for the last 50 to 100 years. However, this is about to become progressively depleted. A particular major concern is that, in the last hundred years, modern agriculture which has allowed the dramatic increase in human populations, has become almost completely dependent on oil.

**2) Human overpopulation:-** It has become more and more recognised that “Most of the social and environmental problems that concern humankind...are not more than symptoms, but are the consequences of a single fundamental problem:- overpopulation.<sup>5</sup>” Burnet was emphatic about the great seriousness of this problem<sup>1</sup>, *yet we allowed over 2 billion more people to arrive on the planet since 1970. A recently published text *The Rapid Growth of Human Populations 1750-2000* (William Stanton) contains the population levels and growth curves for all the world's nations and explores many of the issues that will impact on future sustainability. For anyone with an interest in the matter it is an invaluable resource<sup>5</sup>.*

Worldwide, there must be firstly acknowledgment, then some form of democratic and sensitive control, of human population levels. The only alternative may be the untimely death of many millions (or even billions) worldwide from violence and starvation.

**Detailed examinations of past civilisations which collapsed are most helpful<sup>8</sup>. The main difference between our modern civilisation and past ones that collapsed (eg The Western Roman Empire and The Egyptian Old Kingdom) is that these old ones were discrete and occupied only part of the globe. Globalisation of the world economy means that the collapse of the economy of even one important nation, or a small group of important nations, will impact severely on all other nations.**

DSP believes that the collapse of humankind's high level of consumption of natural resources can be managed, but that the whole world population must face our predicament with a great sense of urgency.

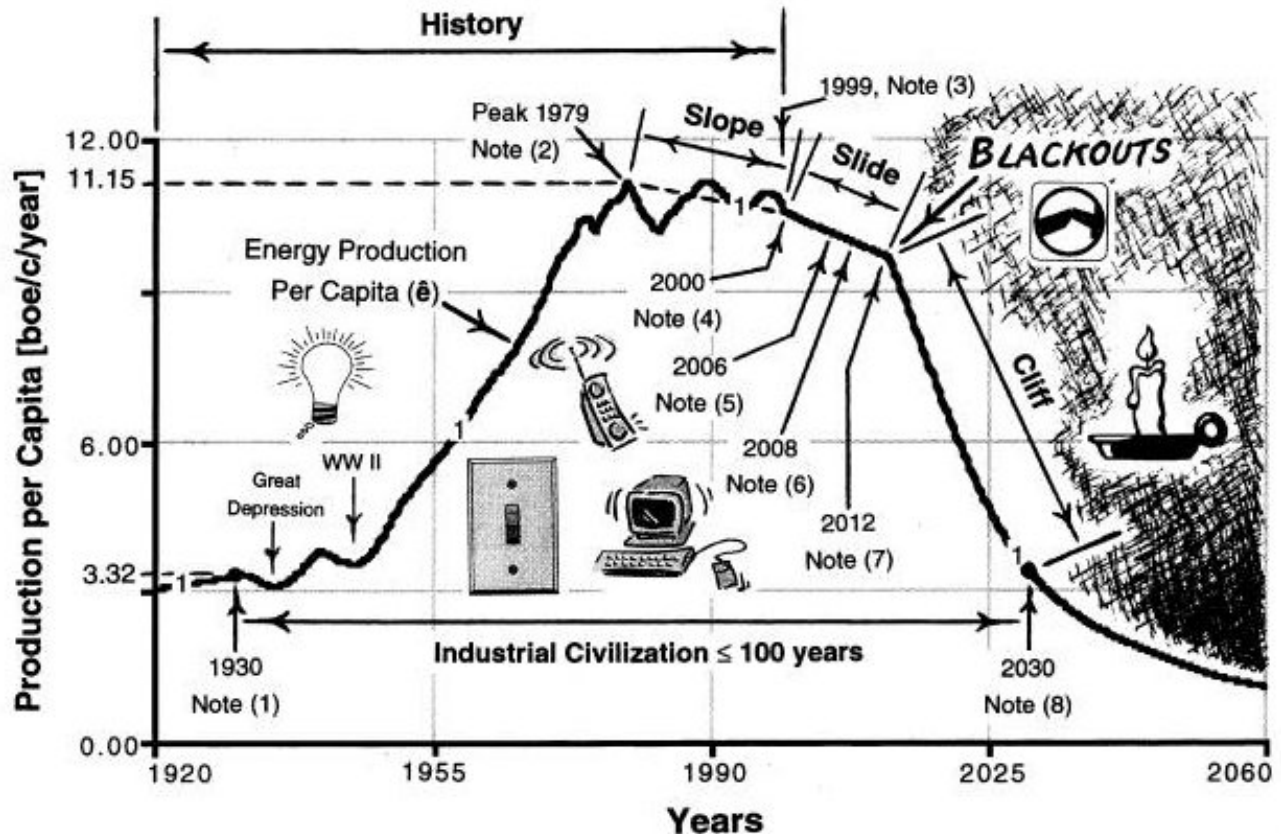
**DSP believes that the medical profession is the group suitably trained in science and most likely to be able to understand the situation and mount a suitable challenge to the Australian Government. The action the AMA takes will be critical in this matter.**

**I quote the very recent prophetic words by a young Australian woman journalist: -“The world can descend into hell to fight over oil, or we can start now in reducing our reliance on it. We can live in peace with less oil, or we can die in war to try to maintain our lifestyle for a little while longer as the expense of our core values...I do not understand why this situation is not the main current public debate. I am, perhaps, in my young years, poisoned by naivety into believing that if a truly devastating threat lurked on the horizon, politicians would cease playing politics and work together to find a solution. That appears not to have happened.”<sup>9</sup> (PT My emphasis).**

.....  
Dr Peter Tod  
Past President,  
Doctors for a Sustainable Population – DSP.

## Notes and References

- 1) Burnet Macfarlane, *Dominant Mammal*, Heinemann, 1970.
- 2) Wolfensohn, James, In: *The Australian*, No Peace Without Hope, 04.02.04 to journalist Roy Eodeston,
- 3) Campbell, Colin, "Association for the Study of Peak Oil" May 2004. *The ASPO Newsletter* is now available at: <http://www.peakoil.net/Newsletter/NL41/newsletter41.pdf>
- 4) Campbell, Colin, in Foreword of Heinberg, Richard, *The Party's Over*. New Society Publishers, 2003. pages ix-xii.
- 5) Stanton, William, *Rapid Growth of Populations 1750-2000*, Multi-science Publishing, 2003.
- 6) Heinberg, Richard, *The Party's Over*. New Society Publishers, 2003.
- 7) Curnow, Jill Personal Communication, *Difficulties of Relying on Solar Energy* 19.05.04.
- 8) Tainter, Joseph, *The Collapse of Complex Societies*, Cambridge University Press, 1988.
- 9) Kingston, Margo, Oils ain't just oils, they're to die for, *Sun-Herald* 16.5.04.
- 10) Duncan Richard, of the Institute on Energy and Man has compiled data for more than 98 per cent of the world's oil production. He reported to the Geological Society of America, November 13, 2000. His Figure 4 of *The Peak of World Oil Production, 2000* is shown in his website:- <http://dieoff.com/page2224.htm>



**Figure 4:** Eight key energy events in the Industrial Civilisation or around 100 years from 1930 to 2030.: -In the above figure, O means oil production per capita.

Event 1:- The figure 3.32 refers to barrels of oil equivalent produced per capita – attained in 1930. Event 2 in 1979 marks the all-time peak of world energy production per capita when energy per capita reached 11.15 barrels of oil-equivalent per capita. The third event in 1999 marks the end of cheap oil – the end of the slope. The 4th event in 2000 marks the eruption of violence in the Middle East. The 5th event marks the all-time peak of world oil production. The 6th event marks the OPEC “crossover event” when OPEC nations produce 51 per cent of the world’s oil and control nearly 100 percent of the world’s oil exports- the end of the slide. The world will divide into two camps, OPEC with surplus oil and the other with none. The 7th event begins the cliff –the epidemic of permanent blackouts spreads worldwide, i.e. first there are waves of brownouts and temporary brownouts, then finally the electric power networks themselves expire. The 8th event in 2030 marks the fall of world energy production (use) per capita to the 1930 level.

The small cartoons stress that Industrial Civilisation is beholden to electricity.

- 11) Howe, John, *The End of Fossil Energy*, McIntire Publishing, 2004.
- 12) Hamilton, Clive, *Growth Fetish*, Allen and Unwin, 2003
- 13) Daly Herman & Cobb J. For the Common Good, 1989. Herman Daly was an economist with the World Bank.