ECOLOGICAL IMPERIALISM: THE CURSE OF CAPITALISM

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In the spring of 2003 the United States, backed by Britain, invaded Iraq, a country with the second largest oil reserves in the world. The United States is now working to expand Iraqi oil production, while securing for itself an increasingly dominant position in the control of this crucial resource as part of its larger economic and geopolitical strategy. Earlier, the same US administration that invaded Iraq had pulled out of the Kyoto Protocol, designed to limit the growth in the emissions of carbon dioxide and other greenhouse gases responsible for global warming – a phenomenon threatening all life as we know it. It is no wonder, then, that the last few years have seen a growth of concern about ecological imperialism, which in many eyes has become as significant as the more familiar political, economic and cultural forms of imperialism to which it is related.

In 1986 Alfred Crosby published a work entitled *Ecological Imperialism: The Biological Expansion of Europe, 900-1900,* that described the destruction wrought on indigenous environments – most often inadvertently – by the European colonization of much of the rest of the world.[1] Old World flora and fauna introduced into New World environments experienced demographic explosions with adverse effects on native species. As the subtitle of Crosby's book suggested, his historical analysis dealt mainly with 'biological expansion' and thus had no direct concern with imperialism as a political-economic phenomenon. It did not consider how ecology might relate to the domination of the periphery of the capitalist world economy by the centre, or to rivalry between different capitalist powers. Like the infectious diseases that killed tens of millions of indigenous peoples following Columbus' landing in the Americas, ecological imperialism in this view worked as a purely biological force, following 'encounters' between

regions of the earth that had previously been separated geographically. Social relations of production were largely absent from this historical account.

The ecological problem under capitalism is a complex one. An analysis at the level of the entire globe is required. Ecological degradation at this universal level is related to the divisions within the world capitalist system, arising from the fact that a single world economy is nonetheless divided into numerous nation-states, competing with each other both directly and via their corporations. It is also divided hierarchically into centre and periphery, with nations occupying fundamentally different positions in the international division of labour, and in a world-system of dominance and dependency.

All of this makes the analysis of ecological imperialism complicated enough, but understanding has also been impeded by the underdevelopment of an ecological materialist analysis of capitalism within Marxist theory as a whole.[2] Nevertheless, it has long been apparent – and was stipulated in Marx's own work – that transfers in economic values are accompanied in complex ways by real 'material-ecological' flows that transform relations between city and country, and between global metropolis and periphery.[3] Control of such flows is a vital part of competition between rival industrial and financial centres. Ecological imperialism thus presents itself most obviously in the following ways: the pillage of the resources of some countries by others and the transformation of whole ecosystems upon which states and nations depend; massive movements of population and labour that are interconnected with the extraction and transfer of resources; the exploitation of ecological vulnerabilities of societies to promote imperialist control; the dumping of ecological wastes in ways that widen the chasm between centre and periphery; and overall, the creation of a global 'metabolic rift' that characterizes the relation of capitalism to the environment, and at the same time limits capitalist development.

THE 'METABOLIC RIFT'

The main ecological contradictions of capitalism, associated with ecological imperialism, were already evident to a considerable extent in the writings of Marx. The accumulation of capital is in some respects a self-propelling process; the surplus accumulated in one stage becomes the investment fund for the next. One of the crucial questions in classical political economy, therefore, was where the original capital had come from that set off the dynamic accumulation that characterized the late eighteenth and nineteenth century. This raised the issue of prior, primary or 'primitive' accumulation.

Taking Britain as the classical case, Marx saw primitive accumulation as having three aspects. First, the removal of peasants from the land by land enclosures and the abrogation of customary, common rights, so they no longer had direct access to or control over the material means of production. Second, the creation by this means of a pauperized pool of landless labourers, who became wage labourers under capitalism, and who flocked to the towns where they emerged as an industrial proletariat. Third, an enormous concentration and centralization of wealth

as the means of production (initially through the control of the land) came to be monopolized by fewer and fewer individuals, and as the surplus thus made available flowed to the industrial centres. Newly proletarianized workers were available to be exploited, while 'Lazarus layers' of the unemployed kept down wages, making production more profitable.

The whole process of primitive accumulation – involving, as Marx put it, 'the forcible expropriation of the people from the soil', and the 'sweeping' of them, as Malthus expressed it, into the towns – had deep ecological implications.[4] Already land under feudal property had been converted into 'the inorganic body of its lord'. Under capitalism, with the further alienation of the land (and nature), the domination of human beings by other human beings was extended. 'Land, like man', Marx noted, was reduced 'to the level of a venal object'.[5]

Marx's concept of a 'metabolic rift' was developed in the context of the alarm raised by agricultural chemists and agronomists in Germany, Britain, France and the United States about the loss of soil nutrients – such as nitrogen, phosphorous and potassium – through the export of food and fibre to the cities. Rather than being returned to the soil, as in traditional agricultural production, these essential nutrients were being shipped hundreds or even thousands of miles away and ended up as waste polluting the cities. The most advanced form of capitalist agricultural production at the time, British 'high farming', was, the German chemist Justus von Liebig contended, nothing but a 'robbery system', due to its effects on the soil.[6]

Marx, who was a careful student of Liebig and other soil chemists, saw this antagonism between human beings and the earth as an important problem. Capitalism had, as he put it, created an 'irreparable rift' in the 'metabolic interaction' between human beings and the earth; a 'systematic restoration' of that necessary metabolic interaction as a 'regulative law of social production' was needed, but the growth under capitalism of large-scale industrial agriculture and long-distance trade intensified and extended the metabolic rift (and still does). Moreover the wastage of soil nutrients had its counterpart in pollution and waste in the towns.[7]

Marx treated both primitive accumulation and the metabolic rift as embodying global implications fundamental to the understanding of the development of capitalism as a world system. As he famously put it:

> The discovery of gold and silver in America, the extirpation, enslavement and entombment in mines of the indigenous population of that continent, the beginnings of the conquest and plunder of India, and the conversion of Africa into a preserve for the commercial hunting of blackskins, are all things which characterize the dawn of the era of capitalist production. These idyllic proceedings are the chief moments of primitive accumulation.[8]

The genocide inflicted on the indigenous populations went hand in hand with the seizure of wealth in the New World. 'The treasures captured outside Europe

by undisguised looting, enslavement and murder flowed back to the mother-country and were turned into capital there.' Great fortunes were built on robbing the periphery of its natural wealth and exploiting ecological resources. In India 'the monopolies of salt, opium, betel and other commodities were inexhaustible mines of wealth.'[9] In his famous 1848 speech on free trade Marx observed, 'You believe perhaps, gentlemen, that the production of coffee and sugar is the natural destiny of the West Indies. Two centuries ago, nature, which does not trouble herself about commerce, had planted neither sugar-cane nor coffee trees there.'[10]

The creation of such monocultures for the export of cash crops to Europe – and the enslaved or semi-enslaved labouring populations that worked them – were products of the development of the capitalist world economy, with its open plunder of the periphery for the benefit of the centre. Monoculture plantations constituted, in the words of Eduardo Galeano in his *Open Veins of Latin America*,

> a sieve for the draining-off of natural wealth … Each region, once integrated into the world market, experiences a dynamic cycle; then decay sets in with the competition of substitute products, the exhaustion of the soil, or the development of other areas where conditions are better. The initial productive drive fades with the passing years into a culture of poverty, subsistence economy, and lethargy …. The more a product is desired by the world market, the greater the misery it brings to the Latin American peoples whose sacrifice creates it.[11]

But tropical monoculture was not the only mode of ecological imperialism in the nineteenth century. British 'high farming' – or early industrialized agriculture – robbed the soil of England of its nutrients, and then sought to compensate for this by robbing other countries of the means to replace them. Marx was again well aware of this. Following Liebig, he noted that British agriculture in effect imported the soil of some countries by shipping soil nutrients and natural fertilisers from these countries back to Britain. British agriculture had become dependent on imported guano.

This illustrated precisely the 'rift' in the natural metabolism that Marx identified, as Jason Moore notes:

> With the transition to capitalism, a new division of labor between town and country took shape – on a world scale and within regions – whereby the products of the countryside (especially, but not only in the peripheries) flowed into the cities, which were under no obligation to return the waste products to the point of production. Nutrients were pumped out of one ecosystem in the periphery and transferred to another in the core. In essence, the land was progressively mined until its relative exhaustion fettered profitability. At this point, economic contraction forced capital to seek out and develop new ways of exploiting territories hitherto beyond the reach of the law of value.[12]

FROM THE CURSE OF NITRATES TO THE CURSE OF OIL

British cotton textiles, as Galeano noted, were exchanged for the hides of Rio de la Plata, the copper of Chile, the sugar of Cuba, and the coffee of Brazil, but also for the guano and nitrates of Peru.[13] In 1840, the same year that Liebig first pointed to the issue of the loss of soil nutrients, a French scientist, Alexandre Cochet, discovered that valuable quantities of nitrate of soda could be extracted from guano and nitrates (saltpeter), both of which were abundant in Peru. In 1841, shortly after Cochet's laboratory results were published, an international guano rush began, as European (especially British) and US agriculturists sought the precious fertilizer to compensate for the soil nutrients that they were losing. In the early 1850s a British officer reported witnessing the simultaneous loading of guano on ships from the following countries from a single island off the coast of Peru: forty four United States ships, forty English, five French, two Dutch, one Italian, one Belgian, one Norwegian, one Swedish, one Russian, one Armenian and three Peruvian. Loading the guano into ships required digging into deep mounds of excrement that covered rocky islands. Acrid dust penetrated the eyes, the nose, the mouth of a worker, and the stench was appalling. After slavery was abolished in 1854 tens of thousands of Chinese coolies were contracted for through Macao and Hong Kong. By 1875 some 80,000 were working under conditions of virtual slavery in the desert and islands of Peru.[14]

Then in 1853 a process was discovered for efficiently mining the nitrate fields in the Tarapacá desert province of Peru, and soon afterwards rich deposits were also found in the adjacent Bolivian province of Atacama. By the 1860s these nitrate fields had become even more important as a source of fertilizer than guano, the availability of which had began to diminish. Nitrates were in high demand not only for fertilizers, but also for the recently invented TNT and other explosives, crucial to the expanding war industries of the industrial capitalist states.[15] By 1875 British investments primarily in the nitrate industry in Peru totalled £1,000,000.

The Peruvian ruling class grew enormously wealthy as a result of the guano trade and the mining of nitrates. This wealth did not, however, flow significantly into economic development, apart from the building of railways; for the rest of the population the nitrate resource soon proved to be a curse. Peru became heavily indebted, in a classic pattern, primarily to British investors, with its guano exports mortgaged well into the future. In 1875, attempting to get out of its debt trap, Peru imposed a state monopoly in its nitrate zones in Tarapacá, expropriating the holdings of private investors (many of whom were foreign, particularly British) and offering them government certificates of payment. Subsequently the Peruvian government also sought to regulate the output of guano and nitrates so that they would not compete against each other.

This led to the War of the Pacific (also sometimes called the Nitrate War), which broke out four years after the Peruvian expropriation of the nitrate industry, when Bolivia, breaking a previous treaty, attempted to raise taxes on

exports by Chilean intermediaries of nitrates from its Atacama province. Chile, backed by British investors, declared war on Bolivia but also on Peru, with which Bolivia was allied. With its more modern, British-built navy and French-trained army, Chile was soon able to seize Bolivia's Atacama province and Peru's Tarapacá – never to leave. Before the war Chile had almost no nitrate fields and no guano deposits. By the end of the war in 1883 it had seized all of the nitrate zones in Bolivia and Peru and most of Peru's coastal guano deposits.[16] Before the war British controlled 13 per cent of Peru's Tarapacá nitrate industry; immediately after the war – given Chile's possession of the region – the British share rose to 34 per cent, and by 1890 it was 70 per cent.[17] As the former US Secretary of State James G. Blaine told a congressional committee investigating the US diplomatic role during the war, the war was about guano and nitrates: 'Nothing else …. It is an English war on Peru, with Chili as the instrument …. Chili would never have gone into this war one inch but for her backing by English capital, and there was never anything played out so boldly in the world as when they came to divide the loot and the spoils.'[18]

Having lost its two principal resources for export, the Peruvian economy collapsed after the war. As the great Peruvian Marxist José Carlos Mariátegui noted, defeat in the War of the Pacific increased Peruvian dependence on British capital. 'Very soon [after the war] the capitalist group that had formed during the period of guano and nitrates resumed its activity and returned to power….The Grace Contract [which they negotiated] ratified British domination in Peru by delivering the state railways to the English bankers who until then had financed the republic and its extravagances.'[19] Now that the Peruvian government no longer had the same wealth of resources to exploit it had no other way to pay off the foreign debts with which it was still encumbered except by handing its railroads over to British investors who had themselves clandestinely backed Chile in its seizing of much of Peru's territory and its most valuable natural resources. As Bruce Farcau observed, the guano and nitrate deposits in Peru turned out, 'like the Midas touch', to be 'a curse disguised as a blessing', first in creating a debt-laden economy, and then giving rise to a war and the loss of these resources.[20]

As a result of its seizure of the nitrate territories in the War of the Pacific Chile was to take on the curse of nitrates in the decades that followed. Europe still needed guano and nitrates in vast quantities to maintain its agricultural productivity and sought to control this trade imperialistically for the benefit of its own capitalists, exploiting these ecological resources to their limit while siphoning off the bulk of the economic wealth they generated. In 1888 the Chilean President José Manuel Balmaceda, who had carried out modernizing reforms including extensive public works and support for education, announced that the nitrate areas of Chile would have to be nationalized through the formation of Chilean enterprises, and blocked the sale of state-owned nitrate fields to the British. Three years later a civil war broke out, with British and other foreign investors supporting the opponents of Balmaceda with money and armaments. The press

in London characterized Balmaceda (in tones very recognizable today) as a 'dictator of the worst stripe'. When the defeated Balmaceda committed suicide in 1891 the British ambassador wrote to the Foreign Office: 'The British community makes no secret of its satisfaction over the fall of Balmaceda, whose victory, it is thought, would have implied serious harm to British commercial interests.' State control of industries and economic infrastructure in Chile quickly receded after the civil war, as the British extended their investments.

In the early 1890s Chile was delivering three-quarters of all its exports to Britain while obtaining almost half of its imports from Britain, creating a trade dependence on Britain greater than that of India at that time. When the First World War broke out in Europe, two-thirds of Chile's national income was derived from nitrate exports primarily to Britain and Germany. The British monopoly of the nitrate trade through its control of the Chilean economy had put Germany at a serious disadvantage in its competition with Britain, since nitrates were necessary for explosives as well as fertilizer. Like Britain, Germany had worked to have Balmaceda ousted, but Chile remained largely under British control, creating a problem for Germany. Just prior to the First World War, however, the German chemist and nationalist Fritz Haber devised a process for producing nitrates by fixing nitrogen from the air. The result within a few years was to destroy almost completely the value of Chilean nitrates, creating a severe crisis for the Chilean economy.[21]

But the curse of nitrates (and nitrogen) did not end there; it was transferred to the world at large, including the rich countries themselves. Nitrogen fertilizers, used on an ever-increasing scale (currently around 100 million tons annually) to maintain agricultural productivity, now pollute more and more of the world's groundwater, lakes and rivers through fertilizer runoff, giving rise to one of the major ecological problems facing the world today.[22]

Outside Latin America the history of the curse of nitrates is now forgotten. But the modern history of the curse of oil, with its all too close parallels with that earlier history, is still very much ongoing. As the *New York Times* noted in its June 7, 2003 issue, in an article entitled 'Striking it Poor: Oil as a Curse', 'scholarly studies for more than a decade have consistently warned of what is known as the resource curse: that developing countries whose economies depend on exporting oil, gas or extracted materials are likely to be poor, authoritarian, corrupt and rocked by civil war.' The mainstream argument attributes this persistent 'curse' to bad governments in poor countries, which supposedly lack the capacity to utilize the enormous and potentially corrupting economic benefits provided by such resources in a productive manner.

The root explanation of the 'curse of oil', however, like that of nitrates, is to be found in ecological imperialism. As Michael Perelman has cogently stated,

> The origins of the curse of oil do not lie in the physical properties of petroleum but rather in the social structure of the world … A rich natural resource base makes a poor country, especially a relatively powerless one, an inviting target – both politically and militarily – for dominant nations.

> In the case of oil, the powerful nations will not risk letting such a valuable resource fall under the control of an independent government, especially one that might pursue policies that do not coincide with the economic interests of the great transnational corporations. So, governments that display excessive independence soon find themselves overthrown, even if their successors will foster an environment of corruption and political instability.[23]

Nowadays, the curse of oil has also come back to haunt the rich countries too – their environments and their economies – in the form of global warming, or what might be called a planetary rift in the human relation to the global commons – the atmosphere and oceans. This planetary ecological rift, arising from the workings of the capitalist system and its necessary companion imperialism, while varied in its outcomes in specific regions, has led to ecological degradation on a scale that threatens to undermine all existing ecosystems and species (including the human species).

THE ECOLOGICAL DEBT

The mobilization of opposition to ecological imperialism is now increasingly taking place via the concept of 'ecological debt'. Acción Ecológica, an Ecuador-based organization that is leading the ecological debt campaign, defines ecological debt broadly as 'the debt accumulated by Northern, industrial countries toward Third World countries on account of resource plundering, environmental damages, and the free occupation of environmental space to deposit wastes, such as greenhouse gases, from the industrial countries.'[24] Accounting for ecological debt radically alters the question: 'Who Owes Whom?'

Fundamental to this position is an analysis of the social interactions between nature and society, as organized by ecological imperialism. The history of pillage and super-exploitation of peoples is seen as part of a larger ecological debt. Capital remains a central focus, since it is the production and consumption patterns of the central capitalist countries that are held responsible for the deteriorating ecological conditions of the planet.[25] A wide range of activities contribute, Third World critics contend, to the ecological debt: the extraction of natural resources; unequal terms of trade; degradation of land and soil for export crops; other unrecognized environmental damage and pollution caused by extractive and productive processes; appropriation of ancestral knowledge; loss of biodiversity; contamination of the atmosphere and oceans; the introduction of toxic chemicals and dangerous weapons; and the dumping of hazardous waste in the periphery.[26]

Within the discussion of ecological debt there are two major dimensions: (1) the social-ecological destruction and exploitation that takes places within nations under the influence of ecological imperialism; and (2) the imperialist appropriation of global commons and the unequal use (exploitation) of the absorption capacity of these commons.

In his *Hungry Planet*, first published in 1965, Georg Borgstrom introduced the concept of 'ghost acres' to illustrate Britain's dependence on food and raw

materials from colonial (or neo-colonial) hinterlands in order to sustain the productive, consumption, and trade operations of that nation. The growth of capital has increased the demands placed on the world as a whole. The 'ecological footprint' of the core nations continues to expand, as they deplete their own historic stocks of material and energy, as well as those of other nations.[27] Debt cycles and military interventions maintain global inequalities, as the South continues to subsidize the North in terms of labour, commodities and natural resources. Extraction of raw materials for commodity production is organized around meeting the demands of the countries of the North, where approximately 25 per cent of the world's population lives but which consumes 75 per cent of global resources.[28] For hundreds of years, the centre has depended on cheap primary materials and labour from the periphery. The volume of material and economic value that flows out of the South increases (the volume of exports from Latin America increased by 245 per cent between 1980 and 1995),[29] yet the financial debt of these nations continues to grow, exacerbated by arbitrary increases in interest rates. At the same time monopoly capital, dominating the world market, is able to overvalue the North's industrial, high-value commodity exports, further unbalancing international trade.[30]

Imperialist forces impose socio-ecological regimes of production on the world, deepening the antagonistic division between town and country, as well as between the North and South. Agro-ecosystems (including both labour and nature) are restructured and 'rationally and systematically reshaped in order to intensify, not merely the production of food and fiber, but the accumulation of personal wealth' by comprador bourgeoisies and monopoly capital.[31] As Josué de Castro noted in a classic 1952 study, 'It was to the advantage of economic imperialism and international commerce, both controlled by profit-seeking minorities, that the production, distribution and consumption of food products be regarded as purely business matters rather than as phenomena of the highest importance to society as a whole.'[32]

At the planetary level, ecological imperialism has resulted in the appropriation of the global commons (i.e. the atmosphere and oceans) and the carbon absorption capacity of the biosphere, primarily to the benefit of a relatively small number of countries at the centre of the capitalist world economy.[33] The North rose to wealth and power in part through high fossil-fuel consumption, which is now culminating in a climate crisis due to the dumping of ecological wastes into the atmosphere. Climate change is already occurring due to the increased concentrations of carbon dioxide and other minor greenhouse gases, warming the earth 0.6°C during the last hundred years.

The ecological debt approach to the question of ecological imperialism, while addressing the larger problem in its full dimensions, nonetheless focuses tactically on the carbon debt as its most concrete, empirical basis – taking advantage of the urgent global necessity of addressing this problem. The nations of the North that cause a disproportionate amount of the emissions due to industries, automobiles, and lifestyles, are largely responsible for climate change, as the 'fossil-fuel

economy creates waste emissions faster than natural systems can absorb them.'[34] The Intergovernmental Panel on Climate Change (IPCC) now expects an increase in temperature of 1.5-6.0° C during this century. 'A temperature rise of 4°C would create an earth that was warmer than at any time in the last 40 million years,' potentially undermining the ability of human civilization to survive.[35] The extreme weather patterns (hurricanes, floods, droughts, etc.) in recent decades, which disproportionately affect the nations of the South, may be partly the result of greenhouse gases accumulating in the atmosphere. Global warming leading to a rise in sea levels threatens many islands as well as some densely populated, low-lying countries such as Bangladesh with floods that would submerge them.

Given that no one owns the atmosphere or oceans, calculating the carbon debt is an attempt to measure how unsustainable the production and consumption of a given economy is, relative to all the others. Simply stated, if a nation uses fossil fuel above a set rate, then it is accumulating a carbon debt, making a disproportionate use of environmental space in the commons for the disposal of its carbon waste.

In determining how to calculate this set rate of emissions, several things must be considered. In the year 1996, already, approximately 7 billion metric tons of carbon were released into the atmosphere, more than 50 per cent of it by the United States and Europe – a massively disproportionate share. Second, current carbon emissions exceed the amount that the environment can absorb. The IPCC has estimated that at least a 60 per cent reduction in carbon emissions from 1990 levels (down to 2,800 million metric tons) is necessary to stabilize or reduce the risk of further climate change.

For all these reasons it follows that the rich industrialized nations, whose output alone already exceeds the world's total allowable amount, must – from a moral standpoint – bear the brunt of the necessary reduction in emissions. As Agarwal and Narain suggested in 1991, any just and reasonable approach for determining how much carbon a nation can emit into the global commons, without accumulating a carbon debt, must be based on emissions per head of population.[36] Andrew Simms and his colleagues have calculated that 'based on the 1990 target for climate stabilization, everyone in the world would have a per capita allowance of carbon of around 0.4 tonnes, per year.'[37] But as time passes and the release and accumulation of gases continues, that allowance decreases. Before long the per capita allowance of carbon will only be 0.2 tons, per year. Inaction creates an ever more difficult position for the future. In fact, if current trends continue, global warming could spiral out of control, seriously threatening the sustainability of life on earth. An 'ecological discontinuity' can occur with few, if any, immediate warning signs.[38]

When the North's current excess of carbon emissions (beyond what is sustainable per capita for the entire world) is translated into dollar terms, based on 'the historically close correlation between the basic measure of economic activity, Gross Domestic Product (GDP) and carbon dioxide emissions,' the ecological debt owed by the North to the South in terms of carbon emissions alone

amounts to an estimated $13 trillion per year.[39] The annual ecological debt of the North, owed to the South, without even looking at the cumulative impact, is thus calculated to be at least three times the financial debt that the South currently 'owes' to the North. Paying it would cancel out the loans that have imprisoned Third World nations, and would also allow them to adopt more fuel-efficient technologies.

But payment of this debt and new technologies will not solve the carbon rift if capitalist production in the South takes place in the same way that it has in the North. Ecological debt proponents therefore advocate a process of contraction and convergence. In this scenario, the rich nations of the North would reduce their carbon (and other greenhouse gas) emissions to an appropriate level to meet the IPCC recommendations, while the poor nations of the South would be allowed to increase their emissions gradually in the interest of social and economic development. The nations of the world would thus converge towards 'equal, and low, per capita allotments'.[40] Variations in allotments may exist, given differences in climate, but per capita emissions for the world as a whole would be within acceptable standards.

Assessing the ecological degradation and conditions of international inequality as these relate to global warming is, of course, only the beginning in trying to access the ecological debt owed to the South. The ocean, another global commons, has long been used for the dumping of toxins and hazardous waste, and its ability to serve as a sink for carbon is decreasing. Furthermore, the depletion of the ocean fish stock threatens to disrupt metabolic relationships within the ocean ecosystem. The full extent of the damage caused by ecological imperialism is indeed unaccounted for, especially if we take into account the historical pillage carried out over several centuries throughout the global periphery as a result of the economic expansion of the core capitalist states.

The ecological debt movement today fights for the restoration and renewal of nature on a global basis. And as ecological sustainability is impossible without social and economic balance, ecological debt activists are increasingly confronting the forces of capitalist expansion, calling into question the legitimacy of the global order. The concentration of wealth is explicitly linked to the impoverishment and exploitation of people and nature throughout the world. A system of incessant accumulation on an ever-increasing scale – and of consumption without bounds – is recognized as one bent on suicide. Stopping the destruction caused by ecological imperialism is seen as the only solution to this global problem. A transformation of the social-ecological relationships of production is needed. If the global commons is the sink where wastes are absorbed, the sink is clogged and overflowing. To challenge ecological imperialism, Acción Ecológica insists that 'it's time to shut off the tap' to prevent the 'unjust flow of energy, natural resources, food, cheap labour and financial resources from the South to the North.'[41]

THE STRUGGLE AGAINST ECOLOGICAL IMPERIALISM TODAY

The problem with the ecological debt campaign is, clearly, that given the current balance of world forces it cannot hope to succeed. This is indicated by the level of resistance on the part of capital marked by the US withdrawal from the Kyoto Protocol, and by the declaration of victory by the Global Climate Coalition (representing many of the leading global monopolistic corporations) with the effective collapse of the protocol. As they state on their web page:

> The Global Climate Coalition has been deactivated. The industry voice on climate change has served its purpose by contributing to a new national approach to global warming.
>
> The Bush administration will soon announce a climate policy that is expected to rely on the development of new technologies to reduce greenhouse emissions, a concept strongly supported by the GCC.
>
> The coalition also opposed Senate ratification of the Kyoto Protocol that would assign such stringent targets for lowering greenhouse gas emissions that economic growth in the US would be severely hampered and energy prices for consumers would skyrocket. The GCC also opposed the treaty because it does not require the largest developing countries to make cuts in their emissions.
>
> At this point, both Congress and the Administration agree that the US should not accept the mandatory cuts in emissions required by the protocol.[42]

If global warming is a problem, the Bush administration has contended, it does not constitute an immediate threat to the United States; hence actions to address the problem that would carry high economic costs should be avoided. Better to depend on futuristic 'carbon-sequestration' technologies and similar means. For many island or low-lying nations watching sea levels rise as the arctic glaciers melt, such a stance is a particularly extreme case of ecological imperialism. While the poor nations of the periphery are expected to continue to pay financial debts to banks of the rich nations of the centre, the enormous ecological debt incurred by the latter is not even being acknowledged – and the entire planetary problem is growing worse by the year. The struggle is therefore likely to intensify.

The ecological debt struggle, organized around the degradation of the global commons – particularly the warming of the atmosphere – brought on disproportionately by the rich countries, has certainly given a new practical meaning to the concept of ecological imperialism. This age-old fight has now become associated with an organized form of resistance centred on the need to set the ecological debt of the rich countries against the financial debts of the poor countries. This immediate struggle, moreover, brings the larger ecological curse of capitalism more and more clearly into view. The economic development of capitalism has always carried with it social and ecological degradation as its other side: the degradation of work, as Marx argued, is accompanied by the degradation of

the earth. Further, ecological imperialism has meant that the worst forms of ecological destruction in terms of pillage of resources, the disruption of sustainable relations to the earth, and the dumping of wastes – all fall on the periphery more than the centre. This relation has not changed at all over the centuries as witnessed by the wars over guano and nitrates of the late nineteenth century and the wars over oil (and the geopolitical power to be obtained through control of oil) of the late twentieth and early twenty-first century.

It is in the nature of this process that it continually worsens. Capital in the late twentieth and twenty-first century is running up against ecological barriers at a biospheric level that cannot be overcome, as was the case previously, through the 'spatial fix' of geographical expansion and exploitation. Ecological imperialism – the growth of the centre of the system at unsustainable rates, through the more thoroughgoing ecological degradation of the periphery – is now generating a planetary-scale set of ecological contradictions, imperiling the entire biosphere. Only a revolutionary social solution that addresses the rift in ecological relations on a planetary scale and their relation to global structures of imperialism and inequality offers any genuine hope that these contradictions can be transcended. More than ever the world needs what the early socialist thinkers, including Marx, called for: the rational organization of the human metabolism with nature by freely associated producers. The fundamental curse to be exorcised is capitalism itself.

NOTES

1 Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe*, Cambridge: Cambridge University Press, 1986.

2 The importance of ecological materialism is highlighted in John Bellamy Foster, *Marx's Ecology: Materialism and Nature*, New York: Monthly Review Press, 2000.

3 For a detailed analysis of the relationship between material-ecological flows (usually expressed in terms of use values) and value flows in Marx's analysis see Paul Burkett, *Marx and Nature*, New York: St. Martin's Press, 1999.

4 Karl Marx, *Capital*, Volume 1, New York: Vintage, 1976, p. 896; Malthus to Ricardo, August 17, 1817, in David Ricardo, *Works and Correspondence*, Cambridge: Cambridge University Press, 1952, Volume 7, p. 175.

5 Karl Marx, *Early Writings*, New York: Vintage, 1974, pp. 318-19.

6 For an elaboration of Liebig's argument and its influence on Marx, see John Bellamy Foster, 'The Communist Manifesto and the Environment', *Socialist Register 1999*, London: Merlin, 1999, p. 179.

7 Based on these observations Marx developed a view of the necessity of a sustainable relation between human beings and nature (going beyond the issue of the soil) – a relation that had to be governed by the principle of maintaining (or improving) the earth for the sake of future generations. As he famously put it: 'From the standpoint of a higher socio-economic formation, the private property of particular individuals in the earth will appear just as

absurd as the private property of one man in other men. Even an entire society, a nation, or all simultaneously existing societies taken together, are not the owners of the earth. They are simply its possessors, its beneficiaries, and have to bequeath it in an improved state to succeeding generations as *boni patres familias* [good heads of the household].' (See *Capital*, Volume 1, London: Penguin Books, 1976, pp. 636-38; Volume 3, pp. 949-50 and 911).

8 Marx, *Capital*, Volume 1, p. 915.

9 Ibid., pp. 914-30.

10 Karl Marx, *The Poverty of Philosophy*, New York: International Publishers, 1963, p. 223.

11 Eduardo Galeano, *Open Veins of Latin America*, New York: Monthly Review Press, 1973, pp. 72-73.

12 Jason W. Moore, 'Environmental Crises and the Metabolic Rift in World-Historical Perspective', *Organization & Environment*, 13(2), 2000, p. 124.

13 Galeano, *Open Veins of Latin America*, pp. 191-92.

14 Bruce W. Farcau, *The Ten Cents War: Chile, Peru and Bolivia in the War of the Pacific, 1879-1884*, Westport, Connecticut: Praeger, 2000, pp. 8-10; William Jefferson Davis, *Tacna and Arica*, New Haven: Yale University Press, 1931, pp. 27, 34-37.

15 Farcau, *The Ten Cents War*, p. 10.

16 See Dennis, *Tacna and Arica*; Farcau, *The Ten Cents War;* John Mayo, *British Merchants and Chilean Development, 1851-1886*, Boulder: Westview Press, 1987, pp. 157-87; William F. Sater, *Chile and the War of the Pacific*, Lincoln: University of Nebraska Press, 1986; Dr. I. Alzamora (former Vice President of Peru), *Peru and Chile*, pamphlet (publisher unknown), no date (around 1908); Harold Blakemore, *British Nitrates and Chilean Politics, 1886-1896: Balmaceda and North*, London: University of London, 1974, pp. 14-22; Michael Montéon, *Chile in the Nitrate Era*, Madison, Wisconsin: University of Wisconsin Press, 1982, pp. 19-20, 27; Henry Clay Evans, *Chile and its Relations with the United States*, Durham, North Carolina: Duke University Press, 1927, pp. 97-119.

17 John Mayo, *British Merchants and Chilean Development*, p. 181.

18 US House of Representatives, 47th Congress, 1st Session, House Reports, Report no. 1790, *Chili-Peru*, pp. 217-18. See also Perry Belmont, *An American Democrat*, New York: Columbia University Press, 1941, pp. 255-62. Blaine's claims regarding the clandestine role of Britain in fomenting the War of the Pacific have been denied by Victor Kiernan, who, based on a careful perusal of British Foreign Office records, delivered a verdict of 'not guilty'. Kiernan's argument, however, rested on the contrary claim that no actual smoking-gun evidence had been located proving that the British Foreign Office had directly instigated the war. The support of British investors and the British government for Chile in the war itself is not in doubt, nor is the division of the loot during and after the war (so strongly emphasized by Blaine). Kiernan also indicates that the British influence was exercised more directly from Valparaiso and Santiago, rather than directly from the Foreign Office in London. The one

factual point in Kiernan's argument that is most doubtful is his insistence that there were no restrictions on Peruvian purchase of British armaments. Representatives of both the Chilean and American governments claimed otherwise. See V.G. Kiernan, 'Foreign Interests in the War of the Pacific', *Hispanic American Historical Review*, 35(1), 1955, pp. 14-36.

19 José Carlos Mariátegui, *Seven Interpretive Essays on Peruvian Reality*, Austin: University of Texas Press, 1971, pp. 9-13; Paul Gootenberg, *Imagining Development: Economic Ideas in Peru's 'Fictitious Prosperity' of Guano, 1840-1880*, Berkeley: University of California Press, 1993, pp. 183-84.

20 Farcau, *The Ten Cents War*, p. 14.

21 Galeano, *Open Veins of Latin America*, pp. 157-58; Blakemore, *British Nitrates and Chilean Politics;* Andre Gunder Frank, *The Development of Underdevelopment in Latin America*, New York: Monthly Review Press, 1969, pp. 73-93; Evans, *Chile and its Relations with the United States*; Montéon, *Chile in the Nitrate Era*; J.R. McNeill, *Something New Under the Sun*, New York: W.W. Norton, 2000, pp. 24-25. During the events leading up to the civil war in Chile US foreign policy, headed by Blaine, who was again Secretary of State, was sympathetic toward Balmaceda, whose nationalism was seen as a curb on British power.

22 See John Bellamy Foster and Fred Magdoff, 'Liebig, Marx, and the Depletion of Soil Fertility: Relevance for Today's Agriculture', in Fred Magdoff, John Bellamy Foster and Frederick H. Buttel, eds., *Hungry for Profit*, New York: Monthly Review Press, 2000, p. 54; National Public Radio, 'The Tragedy of Fritz Haber', July 11, 2002; from www.npr.org/programs/morning/features/2002/jul/fritzhaber/ (Retrieved June 17, 2003).

23 Michael Perelman, 'Myths of the Market: Economics and the Environment', *Organization & Environment*, 16(2), 2003, pp. 199-202.

24 Acción Ecológica, 'Ecological Debt: South Tells North "Time to Pay Up"' (Retrieved March 6, 2003, from www.cosmovisiones.com/DeudaEcologica/a_timetopay.html, 2003).

25 Aurora Donoso, 'Who Owes Who?: Collecting the Ecological Debt' (Retrieved March 6, 2003, from www.Brisbane.foe.org.au/eco_debt.htm, 2003).

26 Acción Ecológica, 'No More Plunder, They Owe Us the Ecological Debt!' (Retrieved March 6, 2003, from www.cosmovisiones.com/DeudaEcologica/a_averde78in.html, 1999).

27 Georg Borgstrom, *The Hungry Planet*, New York: The Macmillan Company, 1965; Mathis Wackernagel and William Rees, *Our Ecological Footprint*, Gabriola Island, British Columbia: New Society, 1996; Richard York, Eugene A. Rosa and Thomas Dietz, 'Footprints on the Earth', *American Sociological Review*, 68 (April) 2003, pp. 279-300.

28 Donoso, 'Who Owes Who?'.

29 Aurora Donoso, 'No More Looting!: Third World Owed an Ecological Debt' (Retrieved March 6, 2003, from www.cosmovisiones.com/

DeudaEcologica/a_looting.html, 2000). The increase is measured in terms of volume not price because of the tendency of the prices of goods from the South to decline.

30 Paul A. Baran and Paul Sweezy, *Monopoly Capital: An Essay on the American Economic and Social Order*, New York: Monthly Review Press, 1966.

31 Donald Worster, 'Transformations of the Earth: Toward an Agroecological Perspective in History', *The Journal of American History*, 76(4), 1990, pp. 1087-1106.

32 Josué de. Castro, *The Geography of Hunger*, Boston: Little, Brown and Company, 1952, pp. 7, 212.

33 For a discussion of the commons and struggles to maintain environmental space free from capitalist intrusion see The Ecologist, *Whose Common Future? Reclaiming the Commons*, Philadelphia: New Society Publishers, 1993.

34 Andrew Simms, Aubrey Meyer, and Nick Robins, *Who Owes Who? Climate Change, Debt, Equity and Survival* (Retrieved March 6, 2003, from www.jubilee2000uk.org/ecological_debt/Reports/Who_owes_who.htm, 1999).

35 John Bellamy Foster, *Ecology Against Capitalism*, New York: Monthly Review Press, 2002, pp. 21, 64.

36 Acción Ecológica, 'Trade, Climate Change and the Ecological Debt' (Retrieved March 6, 2003, from www.cosmovisiones.com/DeudaEcologica/a_averdetrade.html, 2000); Anil Agarwal and Sunita Narain, *Global Warming in an Unequal World: A Case of Environmental Colonialism*, New Delhi: Centre for Science and Environment, 1991. While efficiencies vary between nations, the poorest nations are the most efficient users of energy in terms of GDP. See Simms, Meyer, and Robins, *Who Owes Who?* and Tom Athanasiou and Paul Baer, *Dead Heat: Global Justice and Global Warming*, New York: Seven Stories Press, 2002.

37 Simms, Meyer, and Robins, *Who Owes Who?*

38 See Marten Scheffer, Steve Carpenter, Jonathan A. Foley, Carl Folke, and Brian Walker, 'Catastrophic Shifts in Ecosystems', *Nature*, 403, 2001, pp. 591-596 and Roldan Muradian, 'Ecological Thresholds: A Survey', *Ecological Economics*, 38, 2001, pp. 7-24.

39 A relationship has been established such that $3,000 of GDP produces on average a ton of carbon emissions. See Simms, Meyer, and Robins, *Who Owes Who?* and Acción Ecológica, 'Trade, Climate Change and the Ecological Debt'.

40 Athanasiou and Baer, *Dead Heat*, p. 84. Also see Andrew Simms, *An Environmental War Economy: The Lessons of Ecological Debt and Global Warming*, London: New Economics Foundation, 2001 and Acción Ecológica, 'Ecological Debt'.

41 Acción Ecológica, 'No More Plunder'.

42 Retrieved June 12, 2003 from www.globalclimate.org.