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Reviews

Was Marx an ecologist?

- Reviews section -

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Was Marx an ecologist and does Marx's theory offer a coherent theoretical and practical approach for ecologists in the 21st century? The publication, in the original language (mostly German), of Marx's excerpts and notes on ecology from the mid-1860s may help to answer that question.

Ecologists have sometimes accused Marx and Marxists of an uncritical attitude towards industrial society and the damage it does to the environment. Marxists need to break radically, according to the French-Brazilian socialist, Michel L  vy, with the ideology of linear progress and with the technological and economic paradigm of modern industrial civilisation (L  vy, 2005, 16). Although there are some on the Marxist left who would still agree with L  vy, it would seem that the belief that Marx offered a powerful and coherent approach to ecology has been gaining ground in recent decades. John Bellamy Foster, a prominent defender of a Marxist inspired ecology, claims that: 'Few involved in ecosocialist discussions today doubt the importance of Marx's foundational contribution to the ecological critique of capitalism' (Foster, 2016).

The question as to why this aspect of Marx's historical materialism was either not known or forgotten for so long has a number of answers. The development of Marx's thinking on ecology occurred in the last two decades of his life and many of his writings and notes from that time are still not published. The industrial orthodoxy of Second International Marxism as well as the technological optimism of the early Russian revolution and the dogmatism and industrial strategy of the later Soviet Union were also a factor. The Frankfurt School and other Western Marxist writers, very influential after the Second World War, were mainly interested in culture and aesthetics and rejected the idea that the Marxist dialectic could be applied to nature.

Although there were socialist ecologists in the 1960s and 1970s, well documented in Alan Thornett's recent book, *Facing the Apocalypse: Arguments for Ecosocialism* (2019), it wasn't until the 1980s, with the work of Marxists such as Ted Benton and Elmar Altvater, and the foundation of the journal *Capitalism Nature Socialism*, that the idea of a Marxist ecology began to take shape. The charge of 'productivism' against Marx was challenged with greater theoretical rigour by John Bellamy Foster's *Marx's Ecology* (2000) and Paul Burkett's *Marx and Nature* (1999). Both argued, in these and many publications since, that Marx's analysis of capitalism was an ecological one. In Marx's theory, the drive for profit and the accumulation of capital was based on an unlimited appropriation of natural resources which have a natural limit.

More recently, Kohei Saito's *Karl Marx's Ecosocialism* sets out to demonstrate the immanent systemic character of Marx's ecology, that there is a clear continuity with his critique of political economy (Saito, 2017, 12). What gives added interest to Saito's claims is his use of what then were the still unpublished ecological notebooks of Marx from 1865 to 1868.

We're familiar with the image of Marx sitting in the library of the British Museum making notes about what he had read and copying text by hand into his notebooks. Most of these notebooks consist almost completely of direct quotes from the books, articles, and newspapers that he was reading. They therefore didn't attract much interest from Marx researchers. The gradual publication of these notebooks in the critical edition of Marx's works, *Marx-Engels-Gesamtausgabe* (MEGA) throws light on how Marx worked, his sources of inspiration, and new ideas that he was developing.

In the mid-1860s, around the time of the publication of vol. 1 of *Capital*, Marx began to devote himself to an intense study of natural science, especially in the area of what we now describe as ecology. These ecological notebooks

from 1864 to 1872 have now been published in Marx-Engels-Gesamtausgabe, IV 18 (de Gruyter, 2019). This volume contains 820 pages of notes and excerpts, with an accompanying (separately bound) 470 pages of information and critical comment. Four notebooks, one from 1865/1866 and three from 1868, deal with agricultural chemistry, soil erosion, deforestation, botany, land rent, capitalist agriculture, climate, social relations in the countryside, as well as agrarian relations in pre-capitalist societies and colonialism.

There was intense interest, in the 19th century, in Europe and North America, in the problem of soil erosion and deforestation that was emerging with the advent of large-scale capitalist agriculture. At the same time, there were big advances being made in agricultural chemistry. Before the 1860s, Marx has assumed that modern agricultural science would resolve the problem of soil replenishment. In *The Poverty of Philosophy*, written in 1846, he wrote that at every moment the application of chemistry is changing the nature of the soil and geological knowledge is just now, in our days, beginning to revolutionize all the old estimates of relative fertility (Marx, 1973, 162). These advances in the knowledge of soil chemistry coming from the natural scientists, as well as the increased use of fertilizer, promised big improvements in agricultural production and soil replenishment. But this optimism didn't last.

A major influence on Marx's more radical ecological views in the 1860s was Justus von Liebig (1803-1873). Liebig was a professor at the University of Giessen (the university is now named after him) and he is often described as the father of modern agricultural chemistry. Liebig made important breakthroughs in organic chemistry and in 1840 published his *Die organische Chemie in ihrer Anwendung auf Agricultur und Physiologie* (*Organic Chemistry and its Application to Agriculture and Physiology*).

The ecology notebook from 1865/1866, 220 pages in the present text, was finished before the publication of the first volume of *Capital* in 1867. As a result of Marx's reading of Liebig, he added some strong statements on capitalist agriculture. He wrote, for instance, that the union of agriculture and industry under capitalism led to greater urbanisation which concentrated the historical motive power of society but, at the same time, disturbs the metabolic interaction between man and the earth. Capitalist production therefore only develops the techniques and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth – the soil and the worker (Marx, 1976, 637-638). In a footnote in *Capital* vol 1, Marx wrote that one of Liebig's immortal merits was to have developed the destructive side of modern agriculture (Marx, 1976, 638). The extracts in Marx's notebook are mainly from the 6th edition of Liebig's book from 1862 where he described the destructive aspects of modern agriculture as robbery cultivation (*Raubbau*). And nowhere was this robbery economy (*Raubwirtschaft*) more developed than in North America (141).

Marx's response to Liebig's critique of capitalist agriculture was to throw himself into the study of everything that was being written by the natural scientists of that time on agriculture and the environment. He wrote to Engels on 13 February 1866: I have been going to the Museum [British Library] in the day-time and writing at night. I had to plough through the new agricultural chemistry in Germany, in particularly Liebig and Schönbain, which is more important than all the economists put together (Marx and Engels, 1988, 227).

The Swedish Marxist, Sven-Eric Liedman, whose biography of Marx appeared in English in 2018, comments on Marx's endless reading and composition of excerpts. [Above all, no gaps in knowledge could be left open (Liedman, 2018, 475). In 1866, when Marx was reading Liebig and others on agriculture, his notes which Engels would later assemble to form volume 3 of *Capital*, were already on his desk.

One of the unanswered questions about Marx has been why he published so little in the 1870s after the publication of vol. 1 of *Capital*. The notebooks, many of which are still to be published, will probably help to answer that question. Marx, according to Liedman, continued reading and taking notes as if he himself were immortal.

(Liedman, 2018, 475). The German socialist and friend of Marx, Wilhelm Liebknecht, wrote about Marx's interests in this period:

Especially on the field of natural science, including physics and chemistry, and of history, Marx closely followed every new appearance, verified every progress; and Moleschott, Liebig, Huxley whose popular lectures we attended conscientiously were names mentioned in our circle as often as Ricardo, Adam Smith, McCulloch and the Scottish and Irish economists. (Liebknecht, 1965, 81)

If there was any doubt previously about whether this ecological aspect was in any way central to Marx's thinking, the now published notebooks, from 1865/66 but especially from 1868, show clearly how important this was for Marx, more important than all the economists. And there are still many unpublished notebooks from the 1870s. The ecological problems that concerned Marx were different from but not unrelated to the problems of today. The notebooks suggest that the idea of ecological crisis would have played a more central role in Marx's theory had he been able to finish publication of the final two volumes of Capital which were edited and published by Engels after his death.

In the Economic and Philosophical Manuscripts of 1844, Marx wrote that the universality of man [Menschen, gender neutral but traditionally translated into English as man] manifests itself in practice in the universality which makes the whole of nature his inorganic body (Marx, 1975, 328). This relation between humans as a species and the rest of nature was a key part of Marx's thinking from the beginning. He later used the concept of metabolism (Stoffwechsel) in his analysis of labour. Labour is a process by which humans regulate and controls the metabolism between themselves and nature (Marx, 1976, 283). Even exchange is seen as a process of social metabolism.

The concept of metabolism (Stoffwechsel) was used by Liebig and the natural scientists in the 19th century in the context of physiology and biochemistry and it described biochemical processes of exchange within organisms, for instance the conversion, within the body, of organic matter into energy or the chemical interactions between plants and the soil. All living things are part of this metabolism and sometimes this can break down, for instance, when more is taken out of the soil than is returned, or when plants and trees can't absorb the amount of carbon dioxide that's being produced. We then have a metabolic rift. Marx used the concept of social metabolism in the 1860s in dealing with the ecological crisis created by what some describe as the second agricultural revolution of the 19th century.

For Marx, human metabolism with nature was mediated by labour and was therefore linked to the particular mode of production prevalent at the time. He therefore saw Liebig's metabolic rift as a specifically capitalist contradiction. In volume 3 of Capital he states this explicitly: the moral of the tale is that the capitalist system runs counter to a rational agriculture, or that a rational agriculture is incompatible with the capitalist system (Marx, 1991, 216).

Another scientist that interested Marx, especially in 1868, was Karl Nikolaus Fraas. What was interesting in Fraas's approach to agriculture was his strong emphasis on the effect of agriculture and deforestation on climate and climate change. Marx read and copied from Fraas's 1847 publication, *Klima und Pflanzenwelt in der Zeit* (Climate and Plant World Over Time) and his 1852 *Geschichte der Landwirtschaft* (History of Agriculture). Between 1837 and 1842, Fraas had been director of the Royal Gardens in Athens and until 1847 professor of botany at the university in Athens. Having returned to Germany in 1847 he taught agricultural chemistry at the university in Munich.

What Fraas attempted to demonstrate was that the environment and the natural conditions of production were undermined by human civilization and especially by agriculture. He condemned deforestation because in a region which possesses a very acid and sandy soil, or furthermore even calcareous soil, deforestation counts as the

most powerful cause of creating heatâEuros (622). He researched plant growth in ancient Greece and Rome and concluded that climate change was linked to cultivation and deforestation and that the latter have led historically to the creation of deserts and collapses of civilizations. Fraas wrote in *Klima und Pflanzenwelt* that âEurosoehumans change the world of nature, on which they depend, in so many ways and to a much greater extent than is commonly realized. In fact, humans are able to change nature to such an extent that it is later completely unable to provide what is needed âEuros! There is no hope of changing this.âEuros (Fraas, 1842, 59)

Marx was very impressed by Fraas and wrote to Engels on 25 March 1868 that FraasâEuros"s book was âEurosoevery interesting, especially as proving that climate and flora have changed in historic times. [...] The whole conclusion is that cultivation when it progresses in a primitive way and is not consciously controlled (as a bourgeois of course he does not arrive at this), leaves deserts behind it... âEuros (Marx and Engels, 1988, 558).

MarxâEuros"s solution, of course, was neither reliance on scientific solutions nor pessimism about the future but rather an end to the capitalist system and a socialist society in which âEurosoe the associated producers govern the human metabolism with nature in a rational way, bringing it under their collective controlâEuros!accomplishing it with the least expenditure of energy and in conditions most worthy and appropriate for their human natureâEuros (Marx, 1991, 959).

Directly after Fraas, and probably because Fraas had praised him, Marx read Georg Ludwig von Maurer, a jurist and legal historian who taught German and French historical jurisprudence at the University of Munich. Between 1856 and 1871 he wrote an 11-volume legal history of property rights among the early German people. Marx made extensive notes from MaurerâEuros"s 1854 book, *Einleitung zur Geschichte der Mark- Hof- Dorf- und Stadt-verfassung und der öffentlichen Gewalt* (Introduction to the History of the Constitution of the Mark, Farm, Village and Town and its Public Authority). Maurer defended the theory that among the early German people there existed a social order in which collective working and collective ownership of the land predominated. The administration of affairs was carried out by communal (mark) organisations. This social system maintained a sustainable agriculture.

In 1876 Marx was still studying Maurer (three notebooks from that year with excerpts) as well as in 1882, the year before his death. Stimulated by MaurerâEuros"s work, he wanted to examine the metabolism between humans and nature in pre-capitalist and non-Western societies. Hence his interest in the Russian village commune. In 1870-71, Marx taught himself Russian so he could engage directly in the debates and the research being carried out in Russia. As MarxâEuros"s wife, Jenny, wrote to Engels in January 1870: âEurosoeHe has begun to study Russian as if it were a matter of life and death.âEuros A decade later, in 1881, he corresponded with Vera Zasulich on this issue. He wrote to Zasulich that societies in Western Europe and North America were âEurosoein conflict with the working masses, with science, and with the very productive forces which it generates, - in short, a crisis that will end with its own elimination, through the return of modern societies to a higher form of the âEurosoearchaicâEuros type of collective ownership and productionâEuros (Shanin, 2018, 1193). Marx, by now, was long convinced that ecological crisis could not be fixed by science or modern chemistry but by fundamental changes in the forces and relations of production.

These are just some of the natural scientists and historians that Marx was studying in the year after the publication of *Capital* vol. 1 and which are documented in *MEGA IV* vol 18. Some others were the English agriculturalist John Lockhart Morton, the German economist and philosopher Eugen DÃ¼hring, the French economist and agricultural historian, Leonce de Lavergne, the American economist Henry Charles Carey, and many others.

The publication of MarxâEuros"s ecological notebooks will be of great interest to scholars researching this area of MarxâEuros"s theory and will certainly demonstrate that Marx himself had more than a passing interest in ecology, that he was, in fact, seriously involved in understanding and responding to this âEurosoemetabolic riftâEuros which

he came to see as one of the contradictions of the capitalist system. But how exactly Marx's concept of social metabolism, his ecological critique of capitalism, fits into his account of labour and his theory of value is still a matter of debate among Marxist ecologists.

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2 August 2019

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