

The worm forgives the plough*, but not the chemicals.



Sitting on the veranda in the chill of the early morning the sun blasts over the far distant horizon. The parque, a wire fence, a thin strip of grassland, with a few clumps of trees in the distance and a horizontal horizon some three miles away. So flat you can see the curvature of the earth. A group of horses swish contentedly and a rodeo of 300 cattle drifts slowly across today's paddock.

This is the Pampas.

The noise is almost overwhelming; mainly from some of the 170 species of birds calling, but there is a bull rumbling in the background, a windmill clanking intermittently, cows calling. A tractor starts and 2 horsemen pass in the middle distance. No quad bikes here, yet.

A carancho flies past with one twig, for the umpteenth time. A pair of yellow woodpeckers is nesting behind the house and a hawk in the wisteria above the door. A flight of beautiful green parrots delights – but they are greedy new intruders and loved by no one. Ungainly yellow herons court and cark at the top of the fir tree just yards away and another pokes around on the ground chasing last night's chorus of frogs. An armadillo runs for cover.

A small group of us have been responsible for this extraordinary Estancia Las Dos Hermanas <http://www.lasdoshermanas.org> for the last 25 years. And despite the vicissitudes of the Government, general corruption and the third "once in a century floods" persisting for the last 18 months we are entering a new and

exciting phase. The herd has built up to 2,000 cows; Hereford and Angus. Organic soya is the mainstay of the arable cropping, with sunflower and wheat, using the latest technology; a new Garford camera guided hoe is now on its way. Rodale style crimped cover-crop and direct drilling is being trialled. Rotational lucerne drives the system. 2,000 hectares of pasture support cows, waders, gato and puma, though the nandu have sadly gone in the last few years.

New challenges face us. Should we plant trees for cattle shade and drastically change the landscape? How do we encourage earthworms? Do we replace horses with quad bikes? How do we secure a local organic market? How do we contribute to the development of organic farming and wildlife conservation in Argentina?

On the other side of the boundary fence, half a mile away in every direction, the land is parched. Grass fed beef has long gone of course; replaced by near-continuous GM soya, grown to feed Argentine beef, European dairy cows, pigs and poultry. This has ruined this country. Soil structure is collapsing with “no-till” and ubiquitous Roundup (glyphosate) use is affecting amphibian embryos. These farms are facing ever more serious weed resistance to herbicides. Their response is to quadruple the application of Roundup and resort to old chemicals once banned even in Argentina; do you remember Dicamba (known for spray drift) and 24D (WHO “a possible carcinogen”? They are even returning to the plough. New laws are relaxing controls on converting indigenous forestland into arable production; clearance continues at an alarming rate.

The floods, which are overwhelming large areas of the country and have been preventing farmers getting crops to market for the last 12 months, turn out to be not just a consequence of Climate Change. The soya plant is shallow rooted and is only in the ground for 4 months, consequently water evaporation is low. Aggravated by the fact that the land is often bare for the remaining 8 months of the year, low soil biological activity and compacted soil means that the effect of high rainfall is much greater than in the past.

The soil fauna researcher from the local University of Rio Cuarto told us at our conservation workshop last week about the thriving earthworm populations at 2H. She also told us that on some of the conventional farms with heavy use of agrochemicals there are no worms at all to be found!

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**The Worm Forgives the Plough, John Stewart Collis 1946 Jonathan Cape*