

Something remarkable has happened. Whilst our attention has been on the floods along the Indus valley, political instability, and allegations against cricketers, something I consider to be uplifting and exciting has occurred in Pakistan. But, perhaps it would be better if you were the judge ...

Cotton seems to be thirsty for chemicals. Organic Consumers says: 'Cotton uses more than twenty-five percent of all the insecticides in the world and 12% of all the pesticides.'¹ So it was interesting to find out that one of the main pests in cotton, the mealy bug, has been shown to be deterred by an inexpensive, natural, non-toxic preparation.

Since the creation of this preparation 10 years ago, it has been tested by respected and independent agricultural authorities including The Cotton Research Institute, the Nuclear Institute of Agricultural Botany, the Entomological Research Institute and the pithily named Directorate General of Pest Warning and Quality Control of Pesticides Punjab, Lahore.

What did they find? The Entomological Research Institute of Faisalabad ran tests on two different cotton varieties in 2008 and 2009. In both years the preparation was evaluated alongside the standard chemical spray (a commercial brand of thiamethoxam, a neonicotinoid insecticide) and a water control. The reduction in the number of adult and nymph mealy bugs, expressed as a percentage when compared to the control, was between 90% and 99.9% for the thiamethoxam. For the non-toxic preparation the values were between 88% and 100%. That is statistically significant, and possibly even more significant in other ways that I would like to suggest.

First though, I want to be clear why I say that this preparation - now approved for commercial use in Pakistan under the name 'Ventage'² - is not toxic. How can something that is not toxic remove mealy bugs from cotton? My assertion is due to the ingredients listed on the official specification sheet. Ventage contains *abies nigra* (Black Spruce), *aethiops mineralis* (mercury sulphide), cenchrus contortix (venom from the copperhead snake) and *curare* (a paralysing plant-extract used in medicine and on South American hunters' arrows).

You may think that this would not only knock out mealy bugs but everything else that came near the cotton fields. However, the crucial

¹ <http://www.organicconsumers.org/clothes/224subsidies.cfm> and if you want more try http://www.ecochoices.com/1/cotton_statistics.html .

² <http://www.considera.org/Iftikhar.html> and http://wspharmacy.com/agri/english_version/ventage.htm

thing is the concentration of these active ingredients. The highly successful preparation is homeopathically potentised.

This means that the ingredients listed above have been diluted and mixed time after time – using one part of the mother preparation to 99 parts of dilute alcohol to make each daughter preparation. The mercury sulphide has been through this process of potentisation 200 times, the spruce and snake venom 300 times, and the curare 500 times. Considering that molar concentrations of these ingredients would have passed the seemingly inviolable threshold of Amadeo Avagadro around the twelfth step of this process, we can safely assume that there will be none of these ingredients left.

Many of you will be ahead of me, but let us just précis this situation so we are all clear. A liquid has been tested on plants by independent and respected agricultural experts and found to be highly effective, but it has no trace of the 'active ingredients' in it.

I think this is truly remarkable both practically and in relation to the conceptual basis upon which western scientists have been building for years. Let us consider the practical first. If the above trials were robust could they be repeated not just for cotton, but appropriately adjusted for potatoes and elm trees, roses and lentils etc? Might it be that we can deal with many of the issues facing agriculture with benign solutions? Must we continue to rely upon the aggressive approach that certainly has been effective in growing a lot of food and fibre for us, but which has left enormous problems too? Perhaps we can secure those gains but also reduce our carbon footprint and avoid polluting crops, soils, water and air, to mention nothing of the cruel diseases of agricultural workers themselves.

I have spent years collecting results from individuals and organisations using potentised preparations on crops, and these are available in the same form that homeopaths have forged for humans: a *materia medica* and *repertory*. It is online, free, open source, and can be added to as easily by hobby gardeners as agronomical whizzes from well-funded institutes.³ Everyone is welcome; we will know who has done robust and reliable research as our peers try out the preparations over time.

The work from Pakistan has probably received the most thorough, independent and authoritative evaluation on the site, but others have also been tested by certifying bodies, academics, research institutions and – possibly even more reassuring that this is worth our consideration – by commercial growers who dig into their pockets year after year. Some problems are being addressed by potentised preparations for which there are no chemical alternatives.

³ <http://www.considera.org/matmed> and <http://www.considera.org/rep>

What of the conceptual ramifications? I have assumed that plants are not the 'worried well' that are so grateful for the attention of the sprayers and bug-counting technicians that they are subject to the placebo effect. Perhaps that is a misplaced assumption and I have focussed upon the wrong remarkable result. The results from Pakistan could also be faulty in some way: perhaps the technicians micro-managed the trials to sway the statistics, however unconsciously: that could be investigated explicitly. Perhaps more definitive would be to see if Vantage has sustained success in the market.

In the meantime let us take some assurance from the calibre of the testing authorities and look ahead as if the trials were robust and reliable. Some years ago Dr Jonathan Miller said something along the lines that if the homeopaths are right, everything we ever thought we knew is wrong. I think we can reassure him somewhat because, clearly, our culture has not got *everything* wrong.

My opinion is that if all the work with plants and potentised preparations (which goes back to the 1920s) has something genuine to tell us about reality, then the primary ramifications are in the life sciences. Having tried on this heresy for a while, I have come to consider that the material sciences - that I have understood Dr Miller et al to champion - are pretty well served by current orthodox scientific explanations. Our culture is superb with death! Where his second conditional clause is to the point is when we consider living things - plants, mealy bugs, Resurgence readers etc.

If I have understood my culture - and please correct me if I am wrong here - we have all been encouraged by our education to consider life as a special case of biochemistry, which is in turn a special case of physics. Physics is the fundamental science of our culture and we are only approved (and funded) scientists if we can trace our assertions back to such objective foundations as can be quantified by weighing and measuring. Life (and consciousness) is treated as an emergent property or an epiphenomenon of the one true actuality which is, in the last analysis, material. Life is not a 'primary' phenomenon so we pour all our energies into discovering the precise chain of events which will show that organisms are indeed nothing more than intricate mechanisms in all their - our - dimensions. If I have understood my culture then I do not agree with it.

Science is still my guiding discipline, but the scientific orthodoxy's objectivity - ironically and sadly - has been impaired by these materialistic blinkers. It has long ago forbidden itself the conceptual tools to consider things otherwise.

I am now convinced that I have not totally wasted my time collecting and collating these results. I began my research, in part, to confront the debate about the placebo by working with plants and

potentised preparations. Now I think that if delusion it be, at least it is shared by coworkers, animals, plants and even slurry lagoons.

So I now intend to channel my energies into two main streams. One flows outwards with the intention of making this work more widely known and used, and that means writing articles like this, and tackling the legislature and certifying bodies. It also means crafting the catalogue, the *materia medica*, and its index, the *repertory*, into more transparent and useful tools for matching diagnosis to the relevant preparation. Mainly it means more and more trials.

The second complementary endeavour is to clarify the philosophical and conceptual basis that might encourage more people to investigate this path. Richard Dawkins said he would want to know about the new law of physics that homeopaths have uncovered before he would really give homeopathy the time of day. (Mr Dawkins clearly thinks the issue must come down to physics.). It is helpful to listen to the clear thinking of seekers-for-truth even if areas of agreement might initially seem elusive. I think we can now have that conversation with growing confidence at both the conceptual and evidential levels.

My input to the conversation would not be about clathrate microstructures in water or nanophase properties of materials, or other mechanisms by which the 'memory of water' might be explained. Good luck to those looking in this direction but it's not a path that tempts me. I am much more interested to mull over what and how Goethe saw, and to appreciate the forces which sculpted the archetypes into the awe-inspiring array of the natural world. I prefer to observe life where it chooses to be and to use macroscope and mind to discriminate between this plant that struggles and that one which is thriving. If I had to start from scratch I wouldn't get off the blocks, but I hope to be up and running in the powerful slipstream behind Goethe, Steiner, Suchantke, Hoffman, Schad, Adams, Whicher, Bockemuhl, Bortoft, Colquhoun and others. I feel confident that potentized preparations find their rationale within their beautiful conception of what it means to be alive.