Australian Native Bees and the European Honey Bee
B.Keats July 2008

[Australian Indigenous Social Bee Trigona Carbonaria]

[Apis mellifera and Trigona Carbonaria feeding]

They are so small these creatures, like little black ants with wings – they really are quite endearing the trigona carbonaria. You can put your finger on the hive entrance and the little fellas do not try to bite you and cannot sting you as they are stingless. Quite a different experience from my times with apis mellifera, the 'European' honey bee whose tongue is longer than the trigona's whole body! The name trigona carbonaria is quite a mouthful initially but when you realise that trigon is another word for triangle and carbon is black it starts to come together. However "trigona" was chosen by Jurine in 1807 and "carbonaria" was named by Smith. Both have since died and there does not seem to be a record of the reason behind the namings.

[Trigona beelining towards blossom]

Trigona Carbonaria (TC from here on), an Australian native social honey bee is only a fraction the size of its European cousin being only some 4-.4.5 mm in length. Australia has over 1500 species of native bees

would you believe? Ten of these species are known to be social as opposed to being solitary, that is to say, they function in colonies with a queen bee, drones and workers as does the European bee. Of these 10 species, 3 of them are being domesticated by beekeepers (Trigona Carbonaria, Trigona Hockingsii and Austroplebeia Australis). They have been domesticated in the sense that hives have been designed and purpose built for the bees and the stingless bees (also known as meliponines) go out to 'work' for the farmer by pollinating trees like the macadamia as well as gathering a small amount of honey. This honey produced is only 1-2% of what the regular commercial bees produce but I think what it may lack in quantity would be made up by its medicinal and other qualities. In Central America stingless beekeeping has been cultivated to a high degree for centuries. The bees have been part of the Australian culture for thousands of years and the indigenous peoples of this great land had a mutual cooperation with the bees without radically changing their housing i.e. taken them out of the natural environment. The mutual cooperation came about through indigenous peoples obtaining 'sugarbag' and resinous materials and the bees being the recipients of forces of healing and continuance from song and ritual ceremony.

[Trigona honey pots]

[Trigona carrying pollen]

My journey with native bees only began in February this year and was spurred on by the "Beemaster" Mystery Drama written by Jennifer Kornberger and performed in Perth over Easter at the Australian Anthroposophical Society's AGM. My main intention was not to go into honey production – I just like bees and I am curious. I live in a suburban house in town and Sandra, my wife, runs a Family day Care operation and it just would not do to have stinging bees around. The children get a lot of hands on experience of life in our yard with gardens, composts, worm farms and now they can get to know about indigenous bees that, for the most part, we are so unconscious of. The native social bees are in the tropics and sub tropics only. The Trigona Carbonaria can tolerate the widest range of temperatures of the Australian bees and can be found as far south as Bega and consequently they are the most widespread of the stingless varieties. In Brisbane it is becoming a common sight in gardens to see their little hives perched on top of star stakes, they have become garden ornaments or even 'pets'.

[photos of my hive outside my office – the hive design is an OATH Original Australian Trigona Hive]

The hives have been obtained from stingless bee supply specialists and from rescue operations from storm damage but increasingly from land clearing operations. Some domestic colonies even have exotic character filled, houses built for them by innovative beekeeper-craftsmen. An increasing number of colonies are now going out into colder regions with specially insulated and heated homes.

Now our more familiar Apis Mellifera is not usually afforded such luxuries in Australia because these social organisms can tolerate a much greater range of temperatures. They probably survive everywhere except the higher regions of mountains and Antarctica. Insects are not warm blooded – they do not have blood but they need warmth from the environment to function. The Apis Mellifera are able to make far greater use of environmental warmth and colony generated warmth than any of the social stingless bees anywhere in the world. As a biodynamic person endeavouring to understand universal forces this an important clue in trying to unravel some of the mysteries of nature. In Steiner's agriculture lectures he presents us with polarities everywhere – 500 and 501, limestone and silica, inner planets and outer planets and so it goes on. Seeing the polarities in life can give us insights into whatever we are trying to understand and investigating the Apis Mellifera with the Trigona Carbonaria it is striking how polar they are! Here are some examples:

Apis Mellifera	**Trigona Carbonaria**
light coloured	dark coloured
stings	stingless
comb aligned vertically	comb aligned horizontally
comb built from bodywax	comb built from bodywax and resin
honeycomb cells regular hexagons	honeycomb cells irregular pots
same shape cells for worker brood & food	brood cells distinctly different to storage cells
same size cells for worker brood & food	brood cells smaller than food cells
survives extensive temperature ranges	survives limited temperature ranges
queen mates with many drones	queen mates with one drone
worker bee dies when sting is lost	worker bee does not sting and lives
brood cells only sealed at pupa stage	brood with their food are sealed at egg stage
old queen swarms	new virgin queen swarms
queen can start a new colony	queen stays with the colony she starts
new colony has no support from parent hive	support from parent hive for new hive
queen mates many times on maiden flight	queen mates only once with a single drone

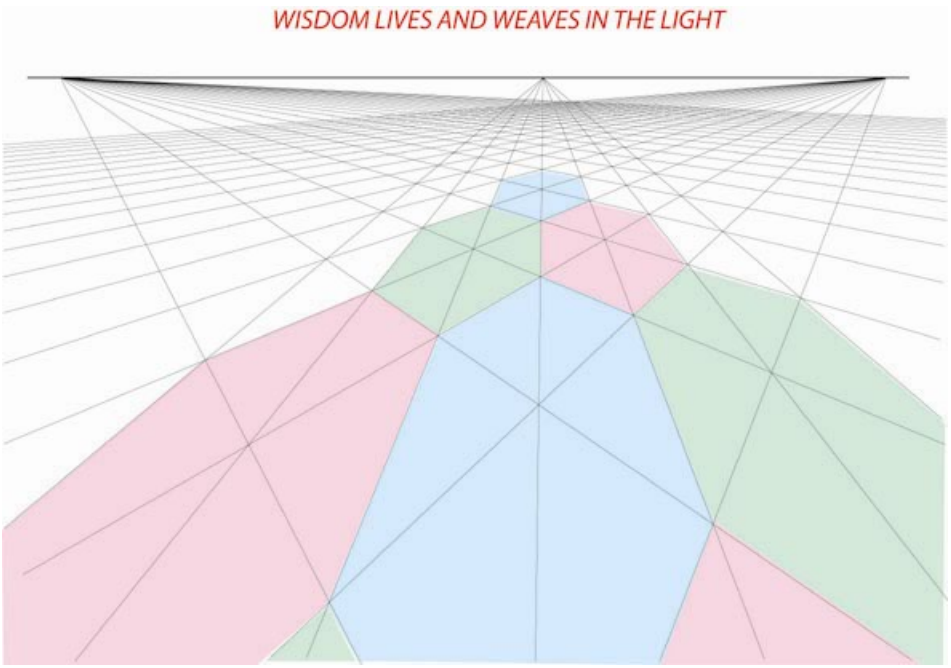
I would seem that the two bee tribes could not be more different from each other!
N.B. Characteristics listed for the Trigona apply to most indigenous social bees.

Some fundamental polarities in the world are Light and Dark, Warmth and Cold and Life and Death. In Biodynamics we learn about the four elements **Earth, Water, Air and Fire** and their associated ethers **Life, chemical, light and warmth..**

Ether	Life	^	Least Dense
		Super	
Ether	Sound/Chemical	Physical	
Ether	Light	v	
Element & Ether	Fire/Warmth	Plasma	
Element	Air	Gaseous	
Element	Water	Liquid	
Element	Earth	Solid	Most Dense

The dense earth element is the latest state of matter in our solar system's evolution as is the life ether. Our planet is the densest in the solar system and yet it has matter imbued with life as expressed in the plant, animal and human kingdoms

The first pole of light and dark is very obvious. The 'European' bee is very light resplendent and as far as I am able to ascertain all the other social bees are black as carbon you could say. I also understand that when the Apis Mellifera becomes feral it gradually becomes darker than its domestic relatives.
There is also a less obvious side to light and that is its form giving qualities and with the Apis Mellifera we see the hexagonal honeycomb forms as an expression of light to a high degree. We see this in the quartz crystal and snowflake too.



How is it that hexagon form is not evident in other bees? Maybe it is somewhere but I do not know about it.

I have already alluded to warmth and we can see that the closer we are to the tropics the more varieties of black bees there are. Stingless bees are thought to have originated from the tropical parts of Africa and spread from there and most of the indigenous beekeeping is in the southern hemisphere. In fact genome research is indicating that all bees have a common ancestry starting in Africa. What we generally call the 'European' bee has African origins! However it is also interesting to note that the stingless bee genus trigona is found near tropical regions and the Indo-Australian region it is not found in Africa.
Wax is the product of warmth forces and the Apis Mellifera is able to draw forth from these forces to a greater extent than the Trigona Carbonaria. The worker bees of the Apis Mellifera draw out all of the

hives wax needs for comb building from the wax producing cells of their own body. This wax warmth is the building foundation for the comb which enables the eggs and grubs to be surrounded in warmth substance. The Trigona Carbonaria are more reliant on the environment and have to supplement their body wax with resin from the plant world to make cerumen for their comb.

How an organism works with warmth is an important clue in evolutionary development. How is it that Apis Mellifera is so more developed in its capabilities to manage warmth?

Reading the forces of Life and Death in bee comparisons is not an easy one for me but what I do find interesting is the well known fact that when Apis Mellifera loses its sting it dies, it sacrifices its life in the defense of the colony organism. The Australian native bees do not sting – they cannot. It is said that they have a vestigial sting, a sting that used to be there at an earlier stage of evolution. When I try to read Nature's book on stings she seems to say that where the light ether forces are strongest that is where the most potent stinging/biting poisons are. Take a look at the snakes, spider and insects of Australia and Africa. The hybrid African honey bee is quite notorious! This bee, originally European, was taken to the African tropics (Tanzania) and adapted to the climate with help from beekeepers selective breeding but presumably also became modified by the environmental conditions there. These bees could now produce more honey in warmer climates but also packed a vicious sting with some aggressive characteristics. The "African" Apis Mellifera was taken to South America and then started to spread northwards via Central America much to the consternation of the US beekeepers!

I question whether the native bees ever had a sting. Could it be possible that bees were taken into human culture and specific properties developed to enhance the gifts Apis Mellifera bring?

Another force to consider is the one related to verticality. The farmer likes to note how the plant crop stands in the field to gauge its health. How well it is growing towards the Sun. When we move our consideration from plants to animals we note that the horizontal is more at work than the vertical especially in the alignment of the spine. Looking at the human being we see the vertical again but different to the plant in that humans can be said to grow downwards, in a sense, from the Sun to the Earth. Many studies have been done on this but perhaps the easiest way to see it is to observe the growth of a child. The embryo has a large head and very stunted limbs. It takes many years for the organs, let alone the limbs, are fully developed in our adult proportions. The head does not change radically in size even though the processes that take place via the head does so dramatically.

How extraordinary is the heart shaped vertically aligned honeycomb of Apis Mellifera!

Then compare it to the horizontal TC horizontal spiraling brood bordered with honeypots.

Apis Mellifera brood develops in high degrees of light, warmth and verticality

The question arises for me: "Did the Apis Mellifera develop the attributes it has with or without the help of human culture?"

Rudolf Steiner's researchers indicate that very early human being cultural developments were made possible through the assistance of supersensible angelic beings. They inspired the leaders of various cultures enabling them to have great wisdoms which they could not have attained under their own power.

Circa 6000-8000BC our grain crops were developed from wild grasses and most of our foodstuffs were domesticated from wild species. Agriculture began and the earth was ploughed not so much to improve the tilth of the soil but to bring light into the darkness.

I suspect that the Apis Mellifera was domesticated at this time and underwent huge transformation through inspired human beings creating with universal forces.

We are far from capable of being morally creative with nature in such a way today even though we can see a trend in this direction. We have become very skilled in working with physical substances, the dense matter of the mineral kingdom. We have yet to be able to create new life forms even though we can genetically modify the matter of existing life forms. We are scrambling to have our moral development keep pace with our technological abilities. We can sense that someday human beings are going to cross a threshold and be co-creators and responsible along with angelic beings for creating new life forms.

This future time is still a long way off but when and if we get there humanity will carry out creations in the plant world in a conscious way (i.e. not via inspirations from angelic beings).

Coming back to the bees!!! The commercial honey bee is under tremendous threats that are continually escalating. It is not difficult to see where the problems stem from. In humanity's lack of wisdom adolescent way we have created the life threatened situation the planet is in. The domestic bees have to be propped up by beekeepers to survive. It is conceivable that they will die out.

There is always hope, it lies deep into our bones! Apart from the many other things we have to wake up and do, we have to learn to understand and work with universal forces and maybe we need to learn from the indigenous bees and cultivate them for mutual benefits.

The modern relationship of the bees and human beings seems to be, in the first instance, that the bees are providing us with an opportunity to care for them and they in turn are helping us find a way to reintegrate with Nature. In the second instance it seems that we have something else to give the bees and indeed all of Nature. Gurnemanz, the veteran grail knight in the story of Parsifal expresses it so well

Nature cannot discern the Saviour on the Cross.
Thus trustingly she lifts her glance to man redeemed.

P.S. The pictures below are of an experimental observation hive I had built using a projected hexagon form. I tried unsuccessfully to colonise the hive with the commercial honey bee. It was too small and they left straight away. I now look forward to the time that my Trigona hive is strong enough to split. The hive is the right size and I am interested to see what effect the form of the hive might have on the bees.

Some references:
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www.sugarbag.net
www.aussiebee.com.au
'Australian Stingless Bees: A Guide to Sugarbag Beekeeping' by John Klumpp – Earthling Enterprises, 2007 ISBN: 9780975713815
Bees - 8 lectures by Rudolf Steiner
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