BEEKEEPING IN TRINIDAD AND TOBAGO: 1901 to 2010
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The Early Years
The earliest evidence of beekeeping in Trinidad indicates that two strains of honey bees were managed in 1901, and a government apiary was established at the Royal Botanic Gardens, St. Clair, in 1902. It was also reported that Government Paymaster, Jimmy Fraser, reared bees in Scarborough, Tobago, in 1918.

In 1908, the colonial administration brought together several entities that previously worked independently to form the Department of Agriculture. This placed oversight responsibility for beekeeping under one agency for the first time. Thereafter, annual Administration Reports of the Director of Agriculture were laid before the Legislative Council and published by the Government Printery. Data from those reports informed that honey was exported between 1914 and 1958. Thereafter, exports stopped altogether because of low prices for honey in Europe. The following table shows the highest annual honey exports for each decade.

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<thead>
<tr>
<th>Decade</th>
<th>Amount (lbs)</th>
<th>Value</th>
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<tbody>
<tr>
<td>1910s</td>
<td>13,925</td>
<td>£311</td>
</tr>
<tr>
<td>1920s</td>
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<td>1930s</td>
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<td>1950s</td>
<td>47,233</td>
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The Administration Reports for intermittent periods up to 1989 highlighted the following events and activities that relate to the beekeeping subsector:

- The passage of the Beekeeping and Bee Products Act 1935.
• The transfer of Mr. E. A Emond, Inspector of Apiaries from the Agricultural Society of Trinidad and Tobago, to the Department’s Division of Entomology in 1945, where he retained his appointment as Inspector of Apiaries.

• The establishment of demonstration apiaries, at departmental substations at St. Augustine, La Pastora, El Reposo, Penal, Rio Claro, Brooklyn Land Settlement, the Central Experiment Station, the Botanic Station at Scarborough, and the Demonstration Station at Louis D’or, inclusive of queen rearing sections and fully equipped honey extracting facilities at some of the apiaries.

• The regular use of the demonstration apiaries for instructions and demonstrations on beekeeping.

• Lectures by the Inspector of Apiaries at the Eastern Caribbean Farm Institute.


• The distribution of queens and small three-frame hives to beekeepers and the purchase of honey extracting equipment for use by beekeepers.

• The formation of a Beekeepers’ Co-operative Society in 1953 with the Inspector of Apiaries serving as the Secretary-Manager. (The Society, whose membership stood at 53 in 1959, exported five tons of honey in 1955, 10.5 tons in 1956, and accumulated 15 tons for export by 1960 but did not export same because of low prices.

• The establishment of apiaries in four elementary schools.

• Preparatory arrangement for the arrival of Africanised bees and post arrival activities.

• The decentralisation of the Ministry of Agriculture in 1988.

The Beekeeping and Bee Products Act, 1935

Beekeeping was perhaps the earliest agricultural subsector to be regulated. The Beekeeping and Bee Products Act (Act 28 of 1935, amended by Act 7 of 1949), sought to control beekeeping through the appointment of an Inspector of Apiaries, the registration of apiaries, provisions for the extraction, preparation and packing of honey and other bee products, and restrictions on the importation of bees, bee supplies and bee products. That such an Act was passed by the Legislative Council in 1935 is indicative of the status of the subsector at that time, and the recognition afforded it by the colonial administration. The Act is the main policy statement on the subsector and was the first major milestone in the subsector’s history.
Apiary registration records indicate that the first two apiaries registered in Trinidad, Nos. 1 and 2, located in Diego Martin and Cororite, respectively, were registered to W. M Dickson on January 30, 1937. The first registered apiary in Tobago, No. 212, was located in Scarborough and was registered to veterinary surgeon, Dr. Timothy Des Iles on September 28, 1938. As at May 31; 2010, 1,534 apiaries were registered in Trinidad and Tobago.

**Africanised Bees**

In 1977 the Ministry of Agriculture launched a comprehensive programme aimed at preparing beekeepers and the public for the imminent arrival of Africanised bees in Trinidad. A number of beekeeping experts visited the island, delivered lectures and submitted recommendations to the Ministry. An early warning system, involving the placement of “bee traps” along the southern coast line and on Chacachacare Island, was installed, and the Inspector of Apiaries, along with an Entomologist from the Ministry, visited Brazil to gain first hand experience in managing Africanised bees.

The first established colonies of Africanised honey bees were found at the southern tip of Trinidad in July 1979. Evidence suggests that a succession of swarms arrived from Venezuela for extended periods thereafter. The impact of the Africanised bees’ arrival on beekeeping in Trinidad was consistent with the bees’ well established pattern of displacing the European honey bee subspecies when they invade an area. All honey bees in Trinidad became Africanised in a few years, and beekeeping in Trinidad as it was previously known, was irreversibly changed.

The number of Africanised bee swarm/colony removal increased exponentially from 12 in 1979, to 613 in 1982, and 3773 in 1984. By August 1992, over 28,107 swarms/colonies were removed by the Ministry’s Bee Abatement Unit, more than 5,300 persons and over 800 animals had been stung by bees, while 12 persons died as a result of Africanised bee stings. The current Inspector of Apiaries, Ian Fletcher, informed that 21 persons have died as a result of being stung by Africanised bees up to May 2010.
There was a serious decline in the number of beekeepers and colonies, in the aftermath of the arrival of Africanised bees. The then Inspector of Apiaries, reported that more than half of the beekeepers in 1978 had given up beekeeping by 1984 because of the high swarm frequency and extreme defensive nature of Africanised bees.

Available data for 1978 and 1987 showed a decline of 14.6% in the number of beekeepers, 30.1% in the number of colonies, and 48.4% in estimated honey production. The relatively small percentage decline in the number of beekeepers was due in part to new entrants to the subsector.

To date, Africanised bees as a phenomenon, is exclusive to Trinidad, perhaps surprisingly so, given the proximity of both islands, the period of time since bees arrived in Trinidad, and their innate migratory tendencies. Even so, the Inspector of Apiaries reported in 1992 that “there was some evidence that a few colonies of bees had become Africanised in 1988 in Tobago, (however) the honey bees on that island are considered to be of the European race”.

Up to 1979, the subsector’s development on both islands paralleled each other. The bees stock was rooted from the same source and genetic material, and beekeeping practices on both islands were similar. The context was one where there was unrestricted movement of bees between both islands, subject to an application for a permit from the Inspector of Apiaries, which was generally issued. After the arrival of the Africanised bees, the Inspector imposed a *de facto* ban on the transportation of bees from Trinidad to Tobago. The arrival of Africanised bees marked the turning point in the parallel development of the beekeeping subsector on both islands and as such is considered the second major subsector milestone.

**Dismantling of the Apiaries Unit**

The Ministry of Agriculture decentralised its operations in Trinidad in 1988, and established Regional Administrative Offices in North and South Trinidad. The net impact of the decentralisation exercise on the administration of the beekeeping in Trinidad was the dismantling of the Ministry’s Apiaries Unit. Beekeeping administration in Tobago was not
directly impacted as the Tobago House of Assembly assumed responsibility for beekeeping on the island when that body was reintroduced in 1980.

Before decentralisation, the Apiaries Unit, the only specialised extension services unit within the Ministry, was headed by the Inspector of Apiaries. The Unit was additionally staffed by a cadre of monthly-paid Agricultural Assistants, and daily-rated workers. The Unit had its own financial allocation, which was controlled by the Inspector of Apiaries.

After decentralisation, all staff of the Apiaries Unit, with the exception of the Inspector of Apiaries, were reassigned to either of the two Regional Administrations, where they functioned as multi-subsector extension personnel. In effect, decentralisation precipitated a situation where the Inspector of Apiaries became a proverbial leader with no followers, since he had no administrative or technical support staff under his purview, to assist in executing the responsibilities of his office. The Inspector of Apiaries was assigned to the Extension and Training Information Services Division of the Ministry, where he was able to provide training to the beekeeping community until his resignation in 2004.

Consistent with the requirements of the Act, which states at section 4 that “There shall be in the public service an Inspector of Apiaries of Trinidad and Tobago”, who “shall be under the control of the Chief Technical Officer (Agriculture)”, a new Inspector of Apiaries was appointed to the non-emolument position, in 2005.

By dint of the appointment, the incumbent Inspector of Apiaries, who was also the holder of a substantive public service post, was required to function in both positions. Indications are that given the statutory requirements imposed on the Inspector of Apiaries by the Beekeeping and Bee Products Act, the incumbent was unable to function in that capacity to the extent required by the Act, for two fundamental reasons. In the first instance, he did not have the requisite administrative and technical support framework, and secondly, there were competing demands on his time, given his other public service appointment.
Coming on the heels of the arrival of the Africanised bees in Trinidad, no other government policy has impacted the national beekeeping subsector as significantly since the passage of the Beekeeping and Bee Products Act, as the decentralisation of operations of the Ministry Agriculture and the resultant dismantling of the Apiaries Unit. There is unanimity amongst the national beekeeping community that this has had a deleterious effect on the beekeeping subsector in general and on the subsector’s development potential in particular. As such, the dismantling of the Apiaries Unit is viewed as the third major milestone in the subsector’s history.

That event also exacerbated the decline of beekeeping in Trinidad, which started subsequent to the arrival of the Africanised bees. Estimates for intermittent years between 1978 and 2008 revealed a steady reduction in the number of beekeepers from 407 to 300, and fluctuating but declining number of colonies from 7,060 to 6,000, over the 30-year period.

Further, between 1970 and 2010, 857 new apiaries were registered in Trinidad. The breakdown of the data by decades revealed that there was a steady decline in the number of apiaries registered over the period, from 263 in the 1970s, to 229 in the 1980s, to 154 in the 1990s, and 78 in the first decade of this century. However, it should be noted that there was increasing tardiness amongst the national beekeeping community in registering new apiaries, particularly so in Trinidad since the dismantling of the Apiaries Unit. In that regard, an apicultural survey in 2001 indicated that an estimated 44.0% of the apiaries in Trinidad were not registered at that time.

The resultant situation is worrisome at best. There is consensus in the national beekeeping community that the subsector should have been insulated from the Ministry’s decentralisation programme, and instead managed centrally as was previously the case. Repeated calls over the past 20 years from subsector stakeholders for reversal of the decision to dismantle the Apiaries Unit, the most recent of which was in July 2010 at a consultative process with the ‘new’ Minister of Agriculture, are yet to bear fruit.
**Varroa Mite and Other Pests and Diseases**

An outbreak of Sac Brood disease in 1989, and several outbreaks of European Foul Brood disease during the 1990s in Trinidad, are the only documented instances of honey bee disease occurrences in Trinidad and Tobago prior to the identification of the parasitic honey bee mite, *Varroa destructor* in Trinidad in July 1996. The Varroa mite was identified in Tobago in August 2000. The mite, described as the parasite with the most pronounced economic impact on the beekeeping industry, infests honey bee colonies and weakens both adult honey bees and their brood by sucking their circulatory fluid. In the process the bees, and ultimately the colony, become susceptible to viruses and other pathogens, leading in most cases to the death of the colony, if left untreated.

The mite has been identified as the major problem experienced by beekeepers in Trinidad and Tobago, but moreso by beekeepers in Tobago, where the European bees seem more susceptible to its exploits. There have been mixed reports on the impact of the mite on Africanised bees in Trinidad, where it would seem that after the initial fall-out following the mite’s arrival (the death of some colonies, decline in production by others), the impact has leveled out. The impact of the mite’s arrival in Tobago was decisively pronounced. An estimated 35.0% of the island’s 649 colonies were lost within three months of the mite’s identification, even though they were detected relatively early.

By November 2003, Tobago beekeepers had to treat with a disease complex; ‘parasitic mite syndrome’ (PMS) associated with the Varroa mite, which further threatened to wipe out all beekeeping on the island. The net impact of the PMS outbreak was a 52.0% reduction in the number of colonies between November 2003 and November 2004: from 672 to 322 colonies. TAS initially responded to both setbacks by importing appropriate medication for treatment of all colonies on the island, and then subsequently imported two batches of 150 ‘Varroa resistant’ queens from Hawaii in December 2004 and December 2006.

The overall impact of Varroa and PMS on Tobago’s beekeeping subsector is also reflected in apiary registration data and the number of active beekeepers. There was a marked upsurge in the number of registered apiaries on the island during the 1980s, when 33 new apiaries were
registered compared to four in the 1970s, and in the 1990s when an additional 25 apiaries were registered. Records from the Division of Agriculture revealed that in 1990 there were 29 active beekeepers on the island, while in 2000 the number stood at an all time high of 40, seven of whom were women. However, only seven apiaries were registered during the first decade of this century and the number of beekeeper has fallen to 16.

All the evidence supports the view that the 1980s and 1990s were pinnacle decades for Tobago’s beekeeping and that the subsector has been in a spiral of decline since 2000 when the mite was identified on the island. Given its impact, the identification of Varroa in Trinidad and Tobago is the fourth milestone in the subsector’s history.

**Other Subsector Developments**

*National Honey Show, London*

Trinidad and Tobago’s participation in the prestigious National Honey Show (NHS), held annually in London, began in 1987 when NHS Executive Committee member, Michael Duggan, took and entered honey from Tobago in one of the open classes at the NHS. The entry won a silver medal. Between 1987 and 2000 Trinidad and Tobago beekeepers won 58 awards (Trinidad, 26; Tobago 32) at the NHS, including the coveted Hender (challenge) Cup on two occasions. Several beekeepers, also attended the NHS, where they served as Judge’s Stewards and participated in post-NHS technical visits. Participation in the NHS ended in 2001 when European Union (EU) regulations requiring the submission of a Residue Monitoring Plan for honey entering the EU from non-EU countries, ‘kicked in’. Trinidad and Tobago was not able to comply and honey entries already packaged for the NHS had to be returned to beekeepers.

*Beekeepers’ Organisations in Trinidad and Tobago*

There are three functioning beekeeping associations on the national landscape, the Trinidad and Tobago Beekeepers’ Association of (TTBA), established around 1924, Tobago Apicultural Society (TAS) formed in November 1992, and the Association of Professional Beekeepers (AOPB) formally launched in June 2001.
TTBA membership is concentrated in northern Trinidad, TAS services the needs of Tobago beekeepers, while the AOPB has grown beyond its parochial moorings in County St. Patrick, in south-west Trinidad, and has members from several counties. Notwithstanding their separate identities, there is a high degree of cohesion amongst all three beekeeping bodies as evidenced by the formation of an umbrella coalition entity in 2005, to facilitate the staging of the Fourth Caribbean Beekeeping Congress Association, and the continuation of collaborative and networking arrangements thereafter.

**County and National Honey Shows**
Capitalising on the momentum generated from participation in the NHS, the AOPB organised and staged the first known county Honey Show in Trinidad and Tobago, in 2002. The success of the show and interest in same by beekeepers from other counties and from Tobago, prompted the AOPB to repeat the exercise, but at a national level in subsequent years.

**State land for Beekeepers**
In 1997 the government agreed, via Cabinet Minute No. 189 of January 23rd 1997, to beekeepers using designated areas of forest reserve lands for beekeeping activities. To date the agreement remains unfilled. This potentially fruitful policy decision could, if implemented, impact the subsector’s viability to the extent that it warrants classification as a positive milestone in the subsectors history, since beekeepers on both islands identified ‘suitable apiary sites’ as their major constraint to enterprise development, in a subsector survey earlier this year.

**The Caribbean Beekeeping Congresses**
Amongst the most significant development in regional beekeeping was the conceptualisation and staging of the First Caribbean Beekeeping Congress in Tobago in November, 1998. The congress, an initiative of TAS, marked the beginning of a series of regional beekeeping congresses and the institutionalisation of the Caribbean beekeeping community. Subsequent congresses were held in Nevis in 2000, Jamaica in 2002, Trinidad in 2005, and Guyana in 2008. A sixth congress, scheduled for Grenada in November 2010, had to be postponed. The Association of Caribbean Beekeepers’ Organisations, formed at the third congress, emerged from a felt need for a regional representative body, expressed at previous congresses.
Beekeepers’ Safaris

Since 2000, Trinidad and Tobago beekeepers have been involved in hosting beekeepers from Europe on ‘Beekeepers’ Safaris’: personalised, beekeeping holiday/study tours. The package includes participation in beekeeping sessions and soft ecotourism activities, opportunities to experience authentic local culture and cuisine, and to engage in mutually enriching information exchange during which new relationships have often been seeded. Forty-six ‘safarians’ participated in eight safaris to date. A ninth safari is planned for January 2011. These safaris have proven to be a unique offering. They are the only known exclusive beekeepers’ holiday to the Caribbean and have added a new dimension to the national tourism product, and possibly a new word to the tourism lexicon: ‘api-tourism’.

Working Group for the Development of the Apicultural Subsector

A "Working Group for the Development of the Apicultural Subsector" was appointed by the Minister of Agriculture in March 2002, under the chairmanship of the Inspector of Apiaries. The objectives of the Group were to facilitate the sustainable growth and development of the apiculture subsector and to facilitate market access opportunities for honey produced locally. The Group’s report and action plan, submitted in September 2002, received ministerial approval and was sent to the respective implementation units within the Ministry. Apparently, because of the lack of a coordinating mechanism, follow-up action was not taken.

National Consultation on the Beekeeping Subsector

In July 2003, the Inter-American Institute for Cooperation on Agriculture hosted a National Consultation on the beekeeping subsector. The objectives of the consultation were to raise awareness amongst beekeepers and other stakeholders on the status, potential and challenges for the sector, as well as to engage in discussions towards forging consensus on the way forward in the development of the sector. The broad spectrum of recommendations that emerged from the consultation underscored the need for a more proactive role of the existing associations if the development goals of the subsector were to be achieved. The consultation recognised that most of its recommendations were well documented in the Report of the
Working Group (referenced in the preceding section) and that focus needed to be placed on implementing recommendations from both undertakings.

**Stingless Bees**

Stingless bees are indigenous to Trinidad and Tobago. Meliponiculture (keeping stingless bees) has been practiced by indigenous dwellers for centuries before the management of European honey bees. There are four species of stingless bees in Tobago, one of which was discovered to be new to science in 2003 and was accordingly given a scientific name, *Plebeia tobagoensis*, to reflect the island on which the bee was located. Two other species were reared by several beekeepers in Tobago, more for pleasure than for economic benefits. Fifteen species of stingless bees were reported to exist in Trinidad. However, only two species were reported to be domesticated by Trinidad beekeepers, one of which was reared by 65 beekeepers in 2000.

Since the mid 1990s, TAS has been collaborating with the Utrecht University, the Netherlands, in a series of research exercises, out of which emerged a number of published papers and the design of a new type of hive developed in Tobago by the University. The University maintained an indoor stingless bee apiary/workshop at the Botanic Station, which was used by its research students. The collaboration has been reduced significantly over the last five years.

There is significant potential for the development of meliponiculture in Trinidad and Tobago, particularly so, given the availability of relevant information on the nest architecture, biology, colony multiplication, and honey harvesting procedure as a result of the referenced collaborative exercise. Moreover, it has been well established that stingless bees’ honey is characterised by properties that validates its use amongst locals for medical purposes.

**Status of Beekeeping in Trinidad and Tobago**

Lack of data and moreso the reliability of the available data, posed challenges in determining the current status of the subsector. The Central Statistical Office (CSO) undertook an Agricultural Census in 2004 and semi-annual agricultural surveys during 2007 and 2008. While the Tobago data bore resemblance to known realities on the ground, the Trinidad data was wholly out of sync with what was known to exist. The Census data informed that there were 144
beekeepers in Trinidad in 2004 and the survey reports for 2007 and 2008 informed that the frame used in the survey in Trinidad was 114 beekeeping “farms”. Both the current and immediate past Inspector of Apiaries were of the view that the CSO data did not reflect the status of beekeeping in Trinidad. Data presented at the Fifth Caribbean Beekeeping Congress, indicating that in 2008 there were 300 beekeepers and 6,000 colonies in Trinidad, seems more reliable than the CSO data.

THA data on the number of beekeepers, colonies, and apiaries in Tobago from 1990 to 2008, can be treated as being relatively accurate, since, to a large extent, the data was generated from actual field visits undertaken by the Division’s Apiaries Officer. The data indicates that beekeeping in Tobago remained steady during the first half of the 1990s, then realised an upswing to peak in 2000, before declining steadily thereafter for the next eight years. Currently there are 16 beekeepers and approximately 450 colonies on the island.

**Looking Ahead**

Government’s policy is one of support for the resurgence of the beekeeping subsector. The Newsday of August 19, 2010, reported the Minister of Agriculture as saying:

> “as a result of the lack of emphasis placed on the industry, the yield from the local hives has been dwindling... we have requested technical assistance from the Brazilians through the Ministry of Foreign Affairs to allow Brazilian experts to come to Trinidad and work with those in the bee industry to ensure we could bring our honey production to the highest standard.”

A review of the subsector’s existing institutional and legislative framework, in particular, the role and function of the Inspector of Apiaries, is imperative if honey production is to be brought “to the highest standard”. The Minister of Agriculture and Ministry officials must recognise that the statutory and administrative responsibilities of the Inspector of Apiaries requires that the incumbent be available on a full-time basis to perform duties associated with the position, and that requisite administrative and technical support services must be provided. Unless a structured, institutional mechanism that is appropriately resourced, mobilised and mandated to implement a sustainable development plan is put in place, attempts at developing the subsector will most likely be short lived.
Of critical importance is the need to recognise that 21st century beekeeping is not a simplistic vocation. The notion that there is ‘money in honey’ is not as figuratively straightforward as changing the ‘h’ in honey to the ‘m’ in money, as is perceived by many, including aspiring beekeepers, investors, advisors, policy analysts, and planners.

Professor John Spence’s view, expressed in the Daily Express of August 19, 2010, speaks to the issue.

“agriculture is more complicated than medicine and involves an understanding of disciplines which are not necessary for medicine” … agriculture depends on knowledge of the sciences – chemistry, physics and biology (as medicine) but if agriculture is to be efficiently performed as a business then a knowledge of the social sciences, accounting, computer skills for record keeping, is also necessary

A successful beekeeping enterprise has similar, and even more requirements, not the least of which are the temperament to treat with a life form has been described as “an integrated and independent being - a "superorganism" - with its own almost eerie, emergent group intelligence”¹, and the temerity to prevail in instances where that superorganism becomes fiercely defensive.

Due consideration must also be given to the fragility of the beekeeping environment, which is threatened by new and exotic pests and diseases, subjected to denudation by untamed bush fires, slash and burn agriculture, creeping urbanisation, ‘fogging’ for mosquitoes, and the establishment of large-scale industrial sites.

There is also a complementarity between beekeeping on the two islands that can be explored. A significant market exists for European queen bees in Trinidad, which could be satisfied by developing commercial queen rearing capacity in Tobago. Of course there is the concomitant need to ensure that Tobago remains Africanised bees free. Given Tobago beekeepers’ “low”

rating of their knowledge/skill in managing Africanised bees in a recent survey, and the high probability that Africanised bees will eventually arrive in Tobago, action must be taken, both to forestall that eventuality and to treat with the reality. Unless pre-arrival measures are instituted, the prospect for sustainable beekeeping in Tobago will be gloomy once Africanised bees arrive.

Moreover, beekeepers must embrace and exploit to the fullest, their collective potential as a ‘cluster’ of socio-economic interests, and the benefits of cooperating rather than competing within their community. Further, there is significant scope to expand and diversify the production and marketing of primary and value-added hive products which must be fully explored. The bottom line is that ‘api-culture’ must be tweaked to place emphasis on its ‘api-business’ component.

Clearly new strategies must be urgently found to ensure that the national beekeeping subsector realises its full potential and to otherwise secure its future. This paper will have served its purpose if it contributes meaningfully to discussion and concerted action in that direction.