

## Chapter 2

# Growing Up In Jamaica

### 2.1 Some Things I Learned From My Diabetic Father

#### 2.1.1 *My First Chemistry Experiment*

My stepmother was still alive when I made my first contact with chemistry, so I must have been less than 7 years old. The memorable event was watching my father test urine, his or that of sundry other folks who had “sugar”, as diabetes was known in the rural hills of Jamaica where I grew up. This and other such community services were liberally dispensed by “Teacher”. I do not recall if these measurements were duly recorded, but my father was such a meticulous diarist, that he would certainly have noted the date and time of his, or the subject’s test, and whether the result was negative or positive.

In fact my father was meticulous about whatever he did, such as preparing for the experiment. First, the required apparatus was laid out on a white towel. The spirit lamp was filled with the purple colored fluid, and the wick was put in place. A test tube and the leather holder, which he had made, were set aside. The wick of the spirit lamp was lit, the test tube was charged with Benedict’s solution to one-third its length, and then placed in the leather holder. Urine, his or the subject’s, previously collected in an enamel chamber pot, was brought forth. An eye-dropper with a rubber suction bulb was used to transfer a few drops of urine into the test tube and heating begun. The translucent blue solution soon started to boil, and sometimes a whitish solid formed. This was a good sign and meant that the “sugar” was not too bad. But woe be it, if a copious red-brown deposit formed for that meant that the “sugar” was too high.

It was some 15 years later before I understood the details of my father’s experiments. First, he had obtained the apparatus at the Drug Store operated by Miss Bailey, the nosey “druggist” in the town of Christiana, 2 miles from the Teacher’s Cottage at Bryce, our village. The fuel for the lamp, also purchased from her, was methylated spirits, which was actually nothing more than ethyl

alcohol, adulterated by addition of methanol and a purple dye, so as to discourage people from drinking it.

Miss Bailey also prepared the Benedict's solution, and she told me that the blue color was due to "blue stone" with which I was familiar, since it was one of the ingredients of the spray that was applied to banana trees to combat leaf-spot disease. I later learned that the proper name for "blue stone" was copper (or to be more precise, cupric) sulfate.

How did "sugar" cause the solution to change from blue to red-brown?

Well I first had to learn that the "sugar" in question was not the same as the substance with which I loaded up my cocoa, and which my father avoided like the plague. He sweetened his coffee with a little white pill which he called saccharin.

"Table sugar", or sucrose, is actually a combination of two other sugars, glucose and fructose. The latter two are called monosaccharides and so sucrose is called a disaccharide. If sucrose is tested with Benedict's solution, it will give a negative result; for reasons that I will explain shortly. However, when sucrose is ingested, it is cleaved by a group of and in normal people the released glucose and fructose are used to supply energy. Any unused glucose is stored for future use as a complex sugar called glycogen and, regrettably and visibly, as fat.

But in order for glucose to supply energy, it must enter the cells where it will be broken down. Entrance to the cell is facilitated by a hormone called insulin which is secreted by the pancreas.

Diabetes is a condition where there is a problem with insulin doing its job. In some people, known as Type 1 diabetics, the pancreas does not produce any insulin at all. This condition occurs mostly in children and was formerly known as juvenile diabetes. With such diabetics, insulin has to be administered so that the subjects can derive energy from the food they eat.

Type 2 diabetes was known formerly as adult-onset diabetes, because it occurred in middle-aged people owing sometimes to heredity, but also because of obesity and an inactive lifestyle. In Type 2 diabetics, the cell is resistant to the action of insulin, and so the pancreas puts out more insulin to try and overcome this resistance.

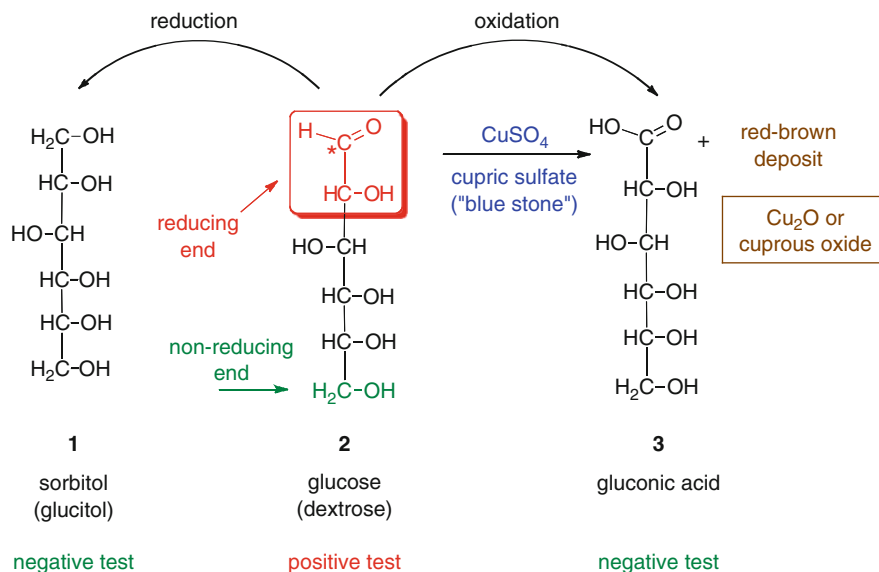
But this condition cannot be allowed to continue, because high levels of glucose moving through the body could result in multiple disorders, including renal failure, blindness and, in extreme cases, hard-to-heal wounds in the extremities, that sometimes lead to amputations. Because of this, insulin has to be injected to augment the naturally produced levels, so as to get rid of the excess glucose.

Notably, exercise also helps to burn up the excess glucose.

The usual way to test for glucose in chemistry laboratories involves the use of Fehling's solutions A and B. However, the urine of diabetics frequently shows high levels of a protein called creatinine, which interferes with Fehling's test. Benedict's solution, used by my father, was therefore developed to overcome this interference; it has the additional advantage of being stored as a single solution.

Now what about the chemistry that was taking place in my father's experiment?

Two of the most fundamental reactions in nature are oxidation and reduction, and glucose is able to undergo both. Glucose (2) known also as baby sugar or



\* Sugars with this structural component, are called "reducing sugars".  
They all give positive Benedict's tests.

**Scheme 2.1** Benedict's Solution contains blue copper sulfate, which converts glucose to gluconic acid, with concomitant formation of solid, red-brown copper oxide

dextrose, is a ready source of energy and is a major component in drinks that are consumed by athletes for a ready boost of energy. Reduction of glucose (2) gives glucitol, which is more commonly known as sorbitol (1). Sorbitol is also sweet but its sweetness is about 60% of that of sucrose. And because it is metabolized very slowly, it has value as a low calorie sweetener and is a common ingredient in "sugar free" candy. However, caution is required because flatulence is an undesirable side effect of its use; and it has also been linked to *irritable bowel syndrome*.

As seen from Scheme 2.1, sorbitol (1) does not have a "reducing end", and so it does NOT give a positive Benedict's test.

In the reaction with Benedict's reagent, glucose is oxidized to gluconic acid 3. In the process, the blue cupric sulfate is concomitantly reduced to cuprous oxide, which is a red/brown solid.

### 2.1.2 Periwinkle: Diabetes Versus Cancer

Today, I am a type 2 diabetic, as are/were two of my siblings; and as I reflect on my father's battle with the disease, I am filled with admiration for his discipline and amazement at his foresight. He did not use insulin, because in the late 1930s (I was born in 1934) it was far too expensive for a school teacher's salary, and in any event

we did not own a refrigerator in which to store it. There was no electricity; but some of our better-off neighbors had kerosene-powered refrigerators.

In those days, insulin was obtained from the pancreas of pigs and cows, but human insulin is now produced in vast quantities by genetic engineering.

My father's preferred medication came from a tall glass of a tea brewed from the leaves of the periwinkle plant, the botanical name of which is *vinca rosea*. The decoction was astringent and excruciatingly bitter, which led me to wonder if the rationale behind its use was that the sugar in the blood would be countervailed by the bitter principle in the periwinkle tea. However, I have learned that this home remedy for diabetes is also widely used in the Indian subcontinent; and so it probably came to Jamaica with the Indian indentured laborers, who were brought to the West Indies by the British colonial powers following the abolition of the West Africa slave trade.

The wide-spread use of periwinkle extract for controlling diabetes in Third World countries was bound to attract First World scrutiny. According to *Wikipedia*, the story begins as follows:

*"In 1952, Dr. Robert Noble received an envelope from his brother Dr. Clark Noble containing 25 leaves from the Madagascar periwinkle plant (Vinca Rosea). It was sent from one of Clark's patients in Jamaica, who had said that a periwinkle tea was being used in Jamaica for diabetes treatment when insulin was unavailable"*.

The author is not able to vouch for the accuracy of the above quotation, but it is entirely plausible since the periwinkle plant grows worldwide.

What can be gleaned for the scientific literature is that in 1955 Dr. C. T. Beer, a medical researcher at Canada's University of Western Ontario disclosed, in a British publication, that a crude extract from periwinkle (obtained from a colleague at the University of Miami) caused "a fall in the circulating leukocytes (white blood cells)—in a—rat"—. This observation suggested a possible treatment for leukemia, a health disorder where white blood cells increase abnormally.

Could the periwinkle extract prevent this abnormal increase of white blood cells?

Three years of in-depth study with purer material followed, and Dr. Beer published an update, co-authored with two of his colleagues (Drs. R. L. Noble and J. H. Cutts), showing that "this substance can readily inhibit the growth of a number of animal tumours."

Not surprisingly the anticancer potential attracted immediate and intense scrutiny, and in 1959, Dr. Beer collaborated with four scientists from Lilly Research laboratory (Eli Lilly & Co.) to isolate the active ingredient, which came to be known as *vinblastine*.

Interestingly, another team from Lilly immediately disclosed that a second active agent was present – and this came to be known as *vincristine*.

Independent work at Eli Lilly on the periwinkle plant (*vinca rosea*) confirmed the absence of anti-diabetic properties. Fortunately, my father did not put all his eggs in the periwinkle basket. He took other steps to control his sugar. He used his homemade dumbbells every morning, at a time when grown men in Jamaica

ridiculed exercise, and were ridiculed for exercising. We did not own a car – nor a bicycle; but walking two miles to and from Miss Bailey’s Drug Store posed no problem for him, even into his advanced years. He did not drink alcohol – a flagrantly anti-social practice in Jamaica “where the rum comes from”.

As far as his diet was concerned, he eschewed the starchy “ground provisions” of yams and sweet potatoes, and the fatty meats, fried in coconut oil, now known to be bad-for-you, that are staples of the Jamaican diet. He replaced these with steamed fish (ugh!), cabbage (ugh! ugh!!) and okra (yuk!!!), and a tasteless, full-of-water vegetable known as cho-cho, available as chayote squash in North American supermarkets.

I am mystified as to how he knew that whole wheat (brown) bread was better for him, than the heavy, hard dough bread, made from refined flour that Jamaicans will die for. His weekly rations of two loaves of brown bread were sent once a week from a bakery in Kingston, 60 miles away.

Because of these multifarious methods of control, my father was trim and lived until he was 76, which at this death in 1957, was a ripe old age for a Jamaican.

That “belief is better than cure” is a well-known aphorism. Perhaps “belief” is a bigger part of the healing arts than the exponents of “cure” are willing to acknowledge. Fortunately, my father never knew that the periwinkle tea was of no anti-diabetic value, or that the Benedict’s test was fraught with problems. For one thing, the threshold for a positive Benedict’s test is so high, that the absence of a red-brown deposit was no cause for comfort. For another, the positive test would have been given for ANY analog of glucose that had the “reducing end” segment highlighted in structure 2 (Scheme 2.1).

Diet and exercise were probably doing it for my father.

### 2.1.3 *Saccharin: His Sugar*

Eschewing sweet foods condemned my poor father to miss out on the sweet potato puddings, corn pone, bulla cake, sugar buns, and most of all, sweetened condensed milk that the rest of us feasted on. My sweet tooth would demand four teaspoons of sugar in my beverage. One saccharin tablet was enough for him; although it was very expensive as compared to brown sugar, the poor man definitely deserved a break.

(See Sect. 5.1.4 for further information about Saccharin)

## 2.2 Schooling

### 2.2.1 *Primary*

The Jamaica of my youth was still a British colony, and so the British educational system was followed – more or less! My primary school education was at Bryce

Elementary, of which my father was “Head Teacher”. There were six grades, and the age of graduation varied, depending on when the student entered Grade I, whether they skipped a grade or two, or had to repeat a grade or two. For those who made it all the way through, that being no easy task, the opportunities were stark.

For the brighter, poor kids, the Pupil Teachers’ (PT) program was the most accessible. There were three grades of PT exams, I, II and III. My father and some other teachers gave after-school lessons to the aspirants, preparing them for the PT exams which were administered once a year. Some of these aspirants worked at the school as assistants to the assistants of the assistants, whereby they burnished their skills at imparting knowledge to the next generation, with the help of a few cuffs now and then to accelerate the learning process.

The long-term goal of Pupil Teachers was to gain acceptance to one of the island’s Teachers’ Colleges, Mico for men, and Shortwood for women. These were (are) highly reputable institutions. Their distinguished graduates include many luminaries who, after Jamaican independence, became Ministers of Parliament, Speakers of the House, and even Governors General to represent Her Majesty.

A far less traveled post-Primary School pathway was to go to Secondary (High) School. It would be many years later, as an undergraduate at Queen’s University in Canada, that I had to confront the fact that only privileged children went to High Schools in the Jamaica of my youth.

This insight came as a result of a public lecture that a Queen’s Professor gave about his sabbatical year at the University in Jamaica. Given the fact that my father couldn’t afford a car, a bicycle or a radio, and many parents of my schoolmates had to borrow money to pay the High School fees, I felt that the Professor’s research may have been conducted in the comfortable confines of the University’s Common Room, instead of in the rural villages.

But shortly after listening to the lecture, I was forced to conclude that the Professor was right. This was because when I was introduced to a Jamaican student from another Canadian University, we soon found that we had at least one common acquaintance. Students of that era, therefore had about one degree of separation between our High School cohort. Ours was therefore a highly distilled sector.

Furthermore, my father may have been too poor to buy a radio, a bicycle or a car, but he did find the money to buy a set of *Cassel’s Books of Knowledge* into which my sister Pixie and I would immerse ourselves after supper, whetting our appetites to visit “strange” lands, a yearning that we both fulfilled as adults. In addition, we had a piano, a violin, and a harmonium organ; and we all had to learn how to play an instrument. Probably we were poor, but we were not uncultured.

### **2.2.2 Music Versus High School**

My father retired as “Head Teacher” of Bryce Elementary School in December of 1945. I was then 11 years and 10 months old and therefore ripe for secondary

schooling, according to the British tradition. In those days there was no secondary school nearby, so I would have to be sent to a boarding school. The previous year my sister, Minette (Pixie), had won a scholarship to St. Andrew's High School, arguably the island's elite Girls School. I may have also taken a scholarship exam in the hope of following in her footsteps. But if I did, it did not register with me, since I cannot remember the experience. In any event, I certainly didn't win anything.

The secondary school year consisted of three terms of roughly three-and-a-half months each. And so in January 1946, I was shipped off to Excelsior School in Kingston as a boarding student. At that time, the School was a fledgling institution, led by Mr. Wesley A. Powell who would blossom into one of the island's most visionary educationists. Thus today, Excelsior is a major multi-functional mega institution that belies the humble beginnings, into which I was delivered in 1946.

The cramped quarters, then on North Street, were adjacent to the Seventh Day Adventist mega-church, with which Excelsior was affiliated – or so it seemed to this 11 year old. I do not recall being subjected to any religious indoctrination; but then that was the least of my worries. School children look forward to the weekends – but I did not. The Sabbath for Seventh Day Adventists begins on Friday night, which meant that play and frolic on the Sabbath was forbidden, even for us non-believers. Much more distressing was that the prohibition extended to the kitchen, and so for the next 24 h, survival would require that we eat cold food.

And what was worse, they eschewed pork.

Whether or not these hardships played into my father's decision, I do not know. But to my delight, for the next term I became a day student, and was boarded along with my sister, with a wonderful family. But if the poor man could have been blessed with foresight of events for the upcoming 3 months, he would have kept me at home. He would soon have to do so anyway.

The route from my boarding house to Excelsior School took me past Bryant's Piano Studio, and I soon discovered that this studio was a favorite gathering place for Jamaica's elite piano players, who plied their trade in the thriving tourist industry. My talent at the piano was on display early in life, even before formal lessons (from my father) had commenced at age 6. The piano styling's of the pianists to whom I was listening at Bryant's studio, held out promise that I could graduate from "Smallwood's piano tutor", with its arid pieces, such as "The Bluebells of Scotland". Instead I could indulge in sumptuous ballads, elegantly played.

And so Bryant's Piano Studio soon proved to be much more alluring than the Latin which Mr. Echeverier was trying to teach me at Excelsior School. I therefore excelled in music appreciation, but came second to last in my class.

My poor father! Here he was, a retired school teacher, living on a teacher's pension and trying to pay my school and boarding fees. Well, he responded by pulling me out of Excelsior, bringing me home, and sending me back to Bryce Primary School to which I had said goodbye 8 months earlier. He would park me there for the last 3 months of 1946, while he figured out what to do with me. This experience, though well deserved, was a crushing humiliation, because after seeing

the bright lights of Kingston, the kerosene lamps of the rural village of Bryce were a drag.

One fateful day, I decided to skip classes for the afternoon session. This was not uncommon. Usually, I would hook up with Baba, my neighbor, and go bird shooting in the nearby bush. But this day I headed home, expecting that my father would be out and about. No such luck. “Why aren’t you at school” he demanded. “I am having pains in my leg”, I lied. Instead of being angry, he seemed worried. “This is not the first time you have complained of these pains—Maybe I should take you to the doctor tomorrow”.

Yippee!! No school for me tomorrow, I rejoiced.

Dr. Tomlinson did a thorough examination, and pronounced that I was suffering from acute appendicitis! “Take him to the hospital right away” he instructed my father.

Dr. V. R. Robb, the island’s legendary, avuncular country physician/surgeon operated on me the next day. He made me a present of my appendix preserved in a fluid – probably formalin. He explained in detail what had gone wrong with the worm-like thing. But as I had no idea what a good appendix was supposed to look like, I did not appreciate what was so bad with mine.

I remained in hospital for over 2 weeks, because it took that long for the three-inch wound in my side to heal. It did not help matters that I would not stay still. On one occasion, I went outside to help push a stalled car, much to the annoyance of the charge nurse, who cuffed me a few times to emphasize her displeasure.

After that I was obviously too weak to return to Bryce Elementary school. My contrived, delicate condition, and prolonged recovery, would continue to serve me well into the immediate future.

My long-suffering father had not given up all hope. While I was luxuriating in my recovery, he was looking for another boarding school. And he found another fledgling one, just like Excelsior, but not in Kingston, and happily not affiliated with Seventh Day Adventists. This one was located in the far hills of the neighboring parish, Clarendon, near the peak of the Bull Head mountains, in short, behind God’s back. And the clincher was that there was not a piano studio for miles around.

### **2.3 Clarendon College: Student AND Teacher**

And so I started at Clarendon College in January 1947. I was to spend the next 9 years at this school, four as a student, and then five as a junior teacher.

As a “grub”, hazing was to be expected, based on rumors we had heard about the British boarding school tradition. It was one of the best ways to build character, we were told. Some lucky grubs were given a pass. For example, fellow grub, Boyd Neita was granted exception by upper classman Baz Dawkins, because he had a beautiful sister. No one seemed to know about MY beautiful sister, so I had to devise my own exemption from hazing. With the three-inch scar on my belly as incontrovertible evidence that I had just had a near-death experience, (who could



quibble about a month or two), I needed time to recuperate. It also helped that I was one of two students who could play the piano well enough for the Saturday night dances. I was therefore not only delicate, but valuable.

I am reflecting upon those days, more than 60 years later, at a time when departing President George W. Bush used to hail “No Child Left Behind” as one of his major pieces of legislation. The success of that edict was determined by regular tests. The premise was that if the teachers taught well, the children would test well. By corollary, if the children tested poorly, the teachers were clearly incompetent.

Since in my 9 years at the school, I was both a student and a teacher, I can certify that the postulate and its corollary are fatally flawed.

We were tested every so often, the apparent purpose being to separate us into streams of bright, less bright etc. There was even a “Remove” status, which, it seemed, meant that the students could be moved down, up or out. But I don’t remember that any one lost any sleep over his/her status.

This was probably because the really important exams came from England, and were based on a curriculum that was designed to ensure that in the British Commonwealth upon which, in those days the sun never set, colonial subjects would be brought up to par. So it is rumoured that students from the islands of the British West Indies, joined their cohort in Hong Kong, Ghana, India etc., and sat down to write the same set of exams that had been prepared by Cambridge University. The answer-books were sent back to Cambridge for grading, and some months later the Jamaican results would be published in *The Daily Gleaner*, the island’s major newspaper.

My miserable record from my 9 months at Excelsior School notwithstanding, I was placed in the middle school at Clarendon College. This meant that at the end of my first year there, at the age of 13, I would sit for the Cambridge Junior School Certificate exams in December of 1947. My favorite subject then was geometry, and I well remember that I was about to write the exam, when I received a telegram from my father telling me that my maternal grandmother had died.

In view of the exams, there was no question of going home for her funeral. Miss Shattie had been my savior and caretaker in multiple ways. She probably had a special place for me, because her only daughter, my mother, had died when I was 9 months old. As I cried at the news, the Headmaster, Mr. Stuart, tried to console me, but also counseled that I should celebrate her memory by giving a good account of myself in the exams.

And I guess I did, in geometry for sure, since I got an A at the Cambridge Junior Certificate level. I probably failed a few subjects, but as far as I can recall, there was no penalty for such failures. I certainly did not have to repeat a year.

Two years later, I wrote the Cambridge Senior School Certificate for which there were three passing grades, first, second, and third. I learned from the published results in *The Daily Gleaner*, that I had “scraped” through with a third.

At the elite schools in Jamaica, this poor performance would have had dire consequences for this 15 year old boy. At those schools, a first class grade would

have been required to proceed to the next level, which was the Cambridge Higher School Certificate, 2 years down the line.

Fortunately, Clarendon College was not one of those elite schools. Entry to those institutions was easiest if you were white, next if you could “pass” for white, next if you were from a wealthy family, and finally if you were black and bright. I failed to qualify on every count. I really did not know whether I was bright or dumb. I would not have described myself as being “lazy”. In fact I recall that I was always busy. “Uneven” might be better description. I was fully engaged in subjects that I liked (biology and geometry), but fully disengaged in others (literature and history).

Because of the less-than-elite status of Clarendon College, low achievers with third class Cambridge School Certificates were allowed to proceed to the next level. And so in keeping with the British system, I embarked upon 2 years of intense study of a few chosen subjects. My choice was limited to what was available – botany, zoology, economics, and geography. These subjects were presented in rigorous detail, certainly the equivalent of freshman standards at some North American universities.

Our teachers for economics and botany were graduates of British universities, and both were eccentric. Miss Ashbourne, a product of the London School of Economics, had spent the war years in England, and having lived through the London blitz, sometimes showed evidence of (what I now realize as) post traumatic stress disorder (PTSD). To our adolescent, insensitive, irreverent amazement, the shaking, shivering, and shimming, as she spoke, were greeted with gales of laughter.

The botany teacher was the Reverend Mr. Leonard Fountain, who held a Master of Arts degree from the University of Edinburgh, Scotland. A class-mate recently described him as an original hippie.

It is said that Scotsmen traditionally do not wear anything beneath their kilts. Mr. Fountain extended that tradition to his baggy short pants. And because his favorite lecture style was to place one foot upon a chair, the view from the front row was very revealing – especially to the girls, who flocked to the front of the class, ostensibly because of their interest in botany!

As far as the boys were concerned, that revelation could be had on any given Saturday morning. Mr. Fountain deplored the fact that most of the boys could not swim. And so every Saturday morning, he collected a bunch of male boarders, walked a mile or so to a lagoon, where everyone removed shirts and pants, and since young boys in those days did not wear underpants they, along with Mr. Fountain, all swam naked.

Mr. Fountain was obviously encouraged by the results of these swimming lessons, because he entered some of his newly minted swimmers in the All Island Interschool’s Swimming competition. This event was held at Bournemouth Club, then one of the island’s posh resorts, which sported an elegant pool. But this was a bewildering experience for country boys, unaccustomed to wearing swimming trunks, and totally ignorant of lanes. Jumping off the platform into the pool was novel, for they were accustomed to launching themselves from the lagoon’s embankment with a mighty belly flop.

Luckily, I never made the team.

Our teachers for the other two subjects, zoology and geography were not university graduates. Both had been trained at Mico Teachers' College and were busily upgrading their credentials, one of them to eventually become a School Principal at another High School, and the other to enter medical school at Howard University in the United States. Indeed they were both studying for the very same exams that they were supposedly preparing us for! Actually, the zoology teacher was repeating the exam because he had failed it the previous year.

This situation did not seem as perilous then, as it now appears in retrospect. We may have been at a disadvantage by having teachers so limited in the compass of their subjects; but luckily we did not know it. We simply found out what we had to learn, and went ahead and learned it. It was in a sense, a survival strategy. We literally read various text books that were used at the elite schools, and disgorged the newly acquired information to one another. The happy result was that of the eight of us who sat the exam in 1951, seven gained Cambridge Higher School Certificates.

All of us in that class were/are greatly indebted to *all* our teachers – even those who were limited in their subject. Their encouragement was never withheld, and they worked very hard on our behalf. Since this was a boarding school, they were always within easy reach, 24/7. We even profited from their shortcomings, for our circumstances forced us to learn how to learn, and in so doing, came to appreciate the aphorism, attributed the Albert Einstein, that “an education is what remains, after you have forgotten everything that you were taught in school”.

And so that remote, under-staffed country school provided me with an education that has continued to serve me well for over 60 years.

### ***2.3.1 “If You Come To a Fork in the Road, Take It” (Yogi Berra): Chemistry By Happy Default***

The title of this section resonates with Yogi Berra's enigmatic advice, because at this point in my life I had no idea where I was heading or what I really wanted to do. There was music; but my father had suggested that I would not be able to make a living from music. I didn't dare to ask him to clarify the thinking behind his advice. Maybe I would just drift along.

Thus, my pathway to a career in chemistry represented the confluence of several coincidences, and much luck – good and bad.

My 5 years at Excelsior School and Clarendon College, were expensive for my father since I was always boarding somewhere. There was neither the custom, nor the possibility, to work during vacations, as happens in North America. My father's coffers were badly depleted, as would also have been true for most middle class families. It was therefore customary for high school graduates to work for a few

years, to establish some sort of financial foundation, particularly for those who aspired to further education.

As in most of the colonies of The British Empire, a job in the civil service, serving Her Majesty's Government, had status appeal. Civil servants had to dress well, shirt and tie for men, and it was considered totally uncool to wear the same outfit every day, as the English expatriates did. But the wages were paltry, and it was rumored that they could either dress "sharp" or eat, but not both.

By contrast, the thriving sugar estates were coveted destinations for young men. Not only did they pay excellent salaries, but employees were able to drive around in Estate jeeps. And more importantly, the Estates all maintained excellent, highly competitive cricket and football teams. The estate club houses, awash in subsidized rum, were alluring value-added perquisites.

But I hated cricket, and was a very feckless footballer. So I definitely lacked value-added appeal. Actually, I never had a chance to apply because of an unexpected fork in the road.

I had finished writing my Cambridge Higher School exams in early December 1951, and was at home awaiting the Christmas season, while I leisurely contemplated my future. I received a telegram (we had no telephone) from Mr. Stuart, the principal of Clarendon College saying that he wanted to see me. Although I had left school, I was terrified. What had I done now, I worried?

Far from being in trouble, he was inviting me to return to Clarendon College, 2 weeks later, as a teacher! I was stunned. I was not one of his favorite students, for that status was reserved for students who excelled at Mathematics and/or Latin. Geometry was okay with me, but not algebra and (ugh) trigonometry. And as far as Latin was concerned, I had still not recovered from Mr. Echeverier's classes at Excelsior 5 years earlier.

Mr. Stuart (or Pops, as he was known) espoused these subjects as criteria of intelligence, probably because they had factored so strongly in his own history. He belonged to a cohort of legendary teachers who, being brilliant but too poor (and/or too black) to attend the few high schools of their childhood, had climbed the ladder of Primary School – Pupil Teachers Program – Mico Teachers College. Because of their drive and excellence, they soon became Principals of Primary schools early in their careers. While on that full time job, they had engaged in correspondence courses from the University of London and earned External B. A. degrees.

Mathematics and Latin were two of the subjects Stuart had taken.

I have often marveled at the ambition, fortitude and discipline that it must have taken for this accomplishment. How could they have managed without access to libraries, tutors, tutorials, Cliff's Notes etc.?

In the small colonial island of Jamaica, news of these scholastic achievements was widely disseminated, because they provided irrefutable evidence for the ethos of upward mobility through education. Some of the achievers became prominent Ministers of Government. Others switched from Primary Schools to elite Secondary Schools, to which poverty or race had blocked their access as students, a generation earlier.

Mr. Stuart had left the über-elite Munroe College to take charge of a fledgling and floundering Clarendon College, 2 years before I arrived on the scene.

My father was of course delighted with the news of Stuart's offer to me. To him, teaching was a noble profession, and I would be the third of his children to follow in his and my mother's footsteps.

And so, in January 1952, I became a teacher at Clarendon College. I was 17 years old, and younger than many of "my students", some of whom had been my buddies and companions 4 weeks earlier.

What did I teach? I taught what I was asked (or more precisely told) to. Mr. Stuart was ahead of his time in thinking, erroneously, that any teacher worth his salt, would be able to teach any subject assigned to him. So in my time there, I taught Spanish to Cambridge Higher School candidates, even though I had taken the subject at the lower Cambridge School Certificate level – and had failed it!

Given the credentials on my Higher School's Certificate, biology would have been a logical subject for me to teach. But I was low on the biology-teacher totem pole. My zoology teacher, having finally passed the exam, was senior to me, and the Rev. Mr. Fountain was still there teaching botany with his leg propped up on a chair.

Nevertheless, in one of those strange events of fate, the teaching of biology ultimately led me to chemistry, albeit in a round about way.

I had already been a student at Clarendon College for 2 years when a new secondary school, Knox College, opened its doors only 3 miles from our house. Under the auspices of Scotland's Presbyterian Church, and the charismatic leadership of the Rev. Mr. Lewis Davidson, the school grew rapidly and gained a well-deserved reputation for incorporating several innovations, that added spark to the conventional starchy secondary schools' curriculum.

A member of the Board of Governors of Knox was the Rev. Alfred Henry, the minister of the local Presbyterian Church where my father had been organist and choir master for decades, and where I frequently played during my vacations from school. Mr. Henry was therefore a good friend of the family.

His son, David, aspired to go to medical school; but his biology was not too good. I was therefore engaged to give him private lessons during the summer vacation.

I must have done a good job, because Mr. Henry broached an idea to me. How was I doing as a teacher at Clarendon College, he enquired. Was I aware that Knox College had been sending its young teachers away for university training? No, I was not. Why didn't I transfer from Clarendon College to Knox in order to avail myself of this program, he asked. Why not, I thought.

And so I told my headmaster, Mr. Stuart, of the advances that had been made to me, and wondered whether Clarendon College had any such programs in mind for its teachers.

"What subject would you study," he asked, quite reasonably. I had not given much thought to the matter, but by reflex, I suggested geography, since it was one of my Cambridge Higher Schools subjects, and Clarendon College still did not have a "qualified" teacher in this discipline. "Oh, we can get geography teachers a dime a

dozen”, he said dismissively. “If you were going to study physics or chemistry, then that would be worthy of consideration.”

With the Clarendon College door now apparently closed to me, Rev. Henry and Knox College became increasingly attractive. But then, one of my life’s pivotal events occurred, although it would be 2 years before I was to fully appreciate it.

### 2.3.2 “*Good Fren Betta Dan Pocket Money*” *Jamaican Proverb*

#### 2.3.2.1 Stan

After I had been teaching for 2 years, Stanley Shepherd arrived at Clarendon College, as the school’s first qualified science teacher. As a teenager, Stan had left the exotic tourist town Port Antonio, to enlist in the British Royal Air Force. After boot-camp in Canada, he was shipped over to England just as World War II came to an end. So he never saw action. Nevertheless, he took advantage of the educational training offered to veterans. He enrolled at Exeter College (now Exeter University). And so he arrived at Clarendon College armed with a British Teacher’s Certificate and a Bachelor of Science degree from the University of London in chemistry, physics and mathematics. He and I were soon to become mentor and mentee, and eventually best friends.

Physics was his first love and mathematics his second. “Chemistry is just like cooking,” he said derisively – in spite of the fact that he was an excellent cook. I eagerly helped him to set up the science labs, and thereby became exposed to smatterings of physics and chemistry. I understood the latter, but not the former. And that situation persists today. If I understand it, it is chemistry; if I don’t, it is physics.

The chemistry so intrigued me that I resolved to learn more. The self-help books “Teach Yourself ‘This or That’ ” published by the Penguin Press Ltd., London, were familiar to me. So I went to the island’s only bookstore, Sangster’s, and purchased the 240 page book entitled, “*Teach Yourself Chemistry, A practical book of self-instruction in Chemistry, based on the work by James Knight, M.A. B.Sc., completely revised and enlarged by G. Bruce Macalpine, B.Sc.*” After gobbling it up, I went on to purchase the more imposing book *A Text-book of Inorganic Chemistry* by J.R. Partington, M. B. E., D.Sc.

These books made it clear to me that chemistry was “definitely in my future.” I applied myself assiduously, pottering around the lab during the evenings, weekends – indeed whenever time allowed.

Of course, nothing escaped Mr. Stuart’s purview, and I was soon summoned.

“Who gave you permission to do experiments in the lab?”

“Mr. Shepherd”, I replied.

“Mr. Shepherd can’t give you permission, because there are fees to be paid”

And so lab fees, (an arbitrary amount, for Stan was so annoyed that he refused to give an estimate), were extracted from my monthly salary thereafter.

Interestingly, teaching chemistry to the lower grades was soon added to my assignments – but the lab fees were never rescinded.

Since one of his recommended subjects, chemistry, was clearly in my future, I revisited the issue of the school sending me to university with Mr. Stuart. But apparently I was too late!

First the School's Board of Governors, which we all knew relied on his recommendation, was thinking of "sending" one of my female colleagues to the island's branch of the University College of the West Indies. She was also a product of Clarendon College, and had excelled in mathematics, which made her one of Stuart's favourites. Second, the "Board" was concerned that there was no guarantee that I would return to the school, after university. I wondered what guarantee the female teacher had given, that I could not have provided.

Nevertheless, this would prove to be fortunate, in retrospect, because my future options would not be constrained by any contract that I would have been obliged to fulfill.

### 2.3.2.2 Miss Vie

The Clarendon College door to my chemistry aspirations was therefore closed; but another door would soon unexpectedly open.

The key to that door was held by Mrs. Evadne Jackson, known simply as Miss Vie. She and her husband were prominent merchants in Chapelton, the village where the school was located. She was in many respects an *in loco parentis* mother to many of my school mates. All of her five children had attended Clarendon College. I was at school with some, and was a teacher of the others.

One of her sons was my classmate, and he had long since gone off to study medicine in Switzerland. Whenever I walked past her store, she would call me in to give me updates about his progress. However, on this occasion, the discussion would take a different turn. She focused the searchlight on me. "What about your future?" she demanded. "Aren't you planning to go to a university and to get qualified?" "Don't you have any ambition?" she abraded.

I explained to her that as merchants, she and her husband could afford to send their kids to university; but my father was a widowed, retired teacher living on a pension and he certainly could not help me.

"Well, how much money do you have in the bank?" she demanded.

"Bank!" I exclaimed.

"Well, how much do you pay for rent?"

"I don't pay rent. The school provides me with lodging."

"How much do you pay for meals?"

"The school also provides my meals."

"Wha' yuh a sey bwoy? " she thundered in the Jamaican vernacular. "Yuh nah pay nutten fe rent, yuh nah pay nutten fe food, an' yuh nuh hav no money in de bank!?"

After admonishing me about several things, imagined and real, that I should not be spending my money on, she instructed me as follows:

“Now, yuh bring me yuh pay at the en’ of every mont’.”

At nearly 21 years of age, I had been working for 4 years, but I dared not disobey her. So, at the end of every month, I would take my paycheck to her and she would discuss my debts, telling me which to pay, and which to forget about for the time being. I was getting my first lessons in how to construct a budget. She would then give me “pocket money” and deposit the rest in the Government Bank run by the local Post Office.

So when the Clarendon College “Board” closed its door to me, I found to my great surprise that, thanks to that wonderful Miss Vie, there was nearly enough money in my Post Office bank account to purchase a one-way ticket to Canada.

There was of course no way that I could ever repay Miss Vie for her selfless kindness and generosity. She had intervened in my life with no imaginable benefit to herself, and with nothing other than my genuine interest at heart. Nevertheless, I did make a gesture to thank her, in some small way, for her acts of love and confidence, given at a time when I needed them most desperately. At a banquet to celebrate her 90th birthday, I took the opportunity to give her my Haworth Medal, the world’s *premiere* prize in carbohydrate chemistry, that had been awarded to me in 1995 by the British Royal Society of Chemistry.

She had extracted a long standing promise from me, that regardless of where I was in the world at the time of her death, I would return to Jamaica to be an eulogist at her funeral. I fulfilled that commitment in October 2007, when she passed away at the ripe age of 100.

With my airfare out of the way, my wonderful siblings collaborated to provide one semester’s fee at a Canadian university.



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