

CHAPTER XIII

THE WIZARD OF THE BAY

I

A BUNDLE of letters awaited me in the hall as I returned from my excursion to the hammock. It was good to receive news from England, and I leisurely went through my pleasant mail. In England there had been snow and sleet. "Snow and sleet," I repeated to myself, as I sat under the pergola, finding it difficult to believe there were such things. A pair of butterflies flew across the azaleas, their wings as gorgeous in colour as the flowers. I heard the fantail doves cooing on the top of the garden aviary, and Moses with a pair of scissors was clipping some poinsettias for the dinner table. I had just heard the plane from Havana fly downwards towards the aerodrome. Two young girls who had been swimming in the pool drew themselves out, slim naiads, and drank iced orange juice as they lay on the warm marble rim.

"The robins are very hungry now the snow is on the ground and are waiting around the door at breakfast-time. I am keeping all the radiators going to avoid any freezing in the pipes, but I do hope the cold weather won't last," wrote my housekeeper, from Pilgrim Cottage.

And as I read her letter I could see the barren beechwoods on the hill above me mantled in snow, and knew how it would weigh down the branches of the russet apple tree over the well. For a moment of homesickness I felt I would

like to mount the hill up to Fawley and make my usual call on the old blacksmith and his wife. I could see them now, Darby and Joan, sitting over the fire in the low, black-raftered room whose window looked across to the Thames valley and the blue-grey hills of Berkshire. It was five o'clock, so the lamp would be lit on the cottage table, and the enormous cat, the world's largest cat I always declared it to be, would be on old Mr. Harman's knees, its great legs dangling over at each side. If the cat was not on his knees, then it would be baking itself under the hot grate, a perilous proceeding which so far had not had a fatal end. Yes, a gossip with Mrs. Harman would be pleasant. This old couple, both safely past the eighty post—

Miss Whissitt's writing! Her letter would certainly have local news. Nothing missed Miss Whissitt, now snugly wintering in Bix Bottom. No need to pity her. She would be taking enormous walks, clumping with heavily nailed boots over ploughed field and thicket. She knew every footpath. She delighted in detecting an obstreperous farmer who had tried to bar her track. I once witnessed how she dealt with owners of footpaths.

"What!" exclaimed Miss Whissitt, as we came to a fence against which someone had piled up a mass of brushwood to prevent the track being followed. "What! There!—it's someone who's taken that house on the corner. What impertinence! There's been a footpath here for three hundred years!"

Then, with immense vigour, her hands encased in the leather driving gloves she always wore, she began to pull away the brushwood. In a few minutes she had cleared a way, and I followed her, a little nervous, I confess, that the enraged owner might appear.

"I'll come back again next week, and see it's kept open. It's always the new people who come into the district who do this sort of thing. Well, they can't!" declared Miss Whissitt.

We owe our England to the Miss Whissitts. When her breed dies we shall lose many of our rights. There was the famous occasion when Miss Whissitt had gone forth with a pair of wire cutters, and snipped the barbed wire of a recalcitrant farmer. He met her midway up his field. "I'll have the law on you, see if I don't—and if you don't get out of here I'll turn the bull loose on you," he bellowed.

"By all means go to law—and lose. This is a public footpath. As for the bull, I am afraid of neither bulls nor bul-lies!" declared Miss Whissitt, and marched on, leaving the irate farmer speechless.

Well, what news had Miss Whissitt sent me from our corner of the Chiltern Hills?

*. . . stood the church clock at ten to three,
And was there honey still for tea?*

"You will be sorry to hear that old Charlie Sharp died last Saturday. He was eighty-seven, and they buried him in Fawley churchyard. What I thought very touching was that, despite the awful weather, old Mark Harman insisted on walking to church in the funeral procession. They were bellringers together for fifty years, and Mr. Harman, at eighty-six, is now the doyen of the village. He feels the loss of his old friend very much, *cela va sans dire*. What is really very singular is that it came out in conversation with Charlie's nephew that Charlie had Florida connections. He had a nephew in business in Tampa, and his widow is now living in Jacksonville!"

Well, this was village gossip, with a vengeance. I was sorry to learn of Charlie's death. I could see old Mr. Harman, a patriarchal figure, walking along the elm-bordered lane to the churchyard with its lychgate, perhaps wondering how long it would be before he took this last journey to join his old colleague. Not long, indeed, for three months later they were destined to lie side by side, the last shoeing-smith of Fawley, the last of a line that had endured for almost four hundred years in this Chiltern village.

"I suppose you are having glorious weather," went on Miss Whissitt. "Here it is cold, but healthy. I have just been down by Pilgrim Cottage and saw smoke coming out of your white chimney, but I knew you were not at the fire-side. I peeped over the garden gate, and the snow made the cottage look very Christmas-cardy. I wonder if you have yet been able to inspect my property, and if it is really quite hopeless? When I tell people I own land in Florida, they look at me quite enviously, and I haven't the courage to tell them what a fool I was. I have just read an article of yours in *The Times* about Florida which could only have been written for one purpose—to make us all here rebellious while you are splashing in orange-blossom-scented swimming pools with Florida nymphs."

A splash at the other end of the pool made Miss Whissitt's letter very relevant to the moment. I had finished reading my mail and was considering entering the pool when my host appeared.

"I have an invitation," he announced, "to take you to see Dr. Backeland."

"I don't want to see any doctors, thank you. I am just going to swim," I replied.

"Dr. Backeland is one of the most remarkable men in

Florida. He has read something you have written in the London *Times* about Florida, which has been sent to him, and he very much wants to meet you."

"That's a blend of enticement and flattery that I can't resist—but who is Dr. Baekeland?" I asked, seeing my host was determined to escort me.

"I will explain in the car."

II

We turned in at the drive of a house in Millionaires' Row, rang, and were ushered into a small lounge off the patio which at once revealed the attraction of this site. A garden, a pool, and a lawn bordered with palms, fell in terraces to a private harbour in which a small yacht lay. The harbour opened on to the blue Biscayne Bay, and miles away across the scintillating water lay the long wooded reef which continues after Miami Beach. Dr. Baekeland was evidently a yachtsman, and his harbour lay, in a frame of graceful palms, on the blue bay at the bottom of his garden. This lovely house had formerly been the Florida home of William Jennings Bryan.

I was lost in wonder at this beautiful vista when a voice made us turn. It was our host, and as he welcomed me I was struck by his resemblance to Rudyard Kipling. He had the same jaw, the same strong nose with wide nostrils and bushy eyebrows. And as he shook my hand it occurred to me that I was looking at a man whose name was practically unknown to the world and yet one whose brain had created things that men were using every hour of their lives, in every corner of the globe.

The story of his life is a romance of applied science, of

the impress of chemistry upon industry and daily life. It is a story which has that fairy-tale quality of progress from failure to success, which is so common in American life.

Leo Hendrik Baekeland was born in Ghent, Belgium, in 1863. Soon after taking his degree in chemistry he emigrated to America, where he became a research chemist, particularly in regard to photographic materials. Among his discoveries was a photographic printing paper which seemed likely to revolutionise photography. Full of hope, and certain of success, he took his invention to the great Eastman Kodak Company. To his intense disappointment the Company rejected his invention. He went away and began to manufacture and market the paper himself.

Its continued success began to attract the renewed attention of George Eastman, the chief of the great photographic material manufacturing company. He sent for Dr. Baekeland and said, "We have considered your invention and have come to the conclusion we can exploit it successfully. I am going to inform you at once of the price we are prepared to pay for your company."

The sum mentioned was over half a million dollars, which Dr. Baekeland would gladly have accepted in the beginning, when struggling to put his invention on the market. But he was now conscious of the ever-increasing fame of his discovery. The negotiations continued for some time. George Eastman was well aware of the immense possibility of the Doctor's discovery, and at last they came to terms.

"I did not get a full million, as has so often been said, but I did get a sum amply large enough to make me financially independent, and to get out of a business I disliked," said Dr. Baekeland. "Photography and photochemistry was

my passion in my younger years, as long as I was merely an amateur. When it developed into a business I lost all interest in it."

Thus it came about that while still a young man Dr. Baekeland found himself rich beyond all his dreams.

What was this discovery of his? He had found a photographic paper which utilised a special colloidal chloride of silver, comparatively insensitive to yellowish and greenish light, but much more sensitive to blue and violet rays. This meant that prints could be taken from photographic films by artificial light, and the laborious and slow printing by exposure to sunlight or daylight was at an end. It affected something like a revolution in professional and amateur photography, and the name given to Dr. Baekeland's paper was *Velox*, which is now known and used throughout the world.

This is not the end of the story, for it is an American story. Dr. Baekeland did not retire, or live on the French Riviera, or go back to his native land and buy an estate. He settled himself comfortably, and then spent a large sum of money on a research laboratory. He began a new quest.

For a time he turned his attention to caustic soda and chlorine, and then, in 1906, he made certain experiments in synthetic phenol resinoids, and he discovered—

Oxybenzylmethyleneglycolanhydride.

This word, looking somewhat like the name of a Welsh railway station, will not convey much to most of us, and yet every one of us, every hour of our lives, is probably using it or touching it. Dr. Baekeland, looking for a substitute for resin, found an insoluble, infusible material, made from the

interaction of formaldehyde and phenol. It was a new chemical which looked like amber or certain of the resins found in nature, and he called it Bakelite.

He scarcely knew even then what a tremendous discovery was in his hands and how far-reaching would be its effect. He began to make commercial applications of his Bakelite in 1907. To-day there are factories throughout the world. Edison utilised it for gramophone records, the fountain-pens we write with are mostly of Bakelite, as are also the ignition boxes and steering wheels of motor-cars. Most of the electric light switches in our houses are Bakelite too, for this colourable hard plastic has banished metal polishing, and much household drudgery.

The cases and panels of radio sets are usually of Bakelite, the transparent cigarette holder, the coffee table, the foundation of bristles and shaving brushes, the counter and stools of the cocktail bar, the dental plate, the safety razor, costume jewellery in brilliant colours, furniture and wall partitions in ships, for it is light and non-inflammable, armature windings, brake linings and gears, for the material outwears steel and is a first-class abrasive for grinding wheels, cups, saucers, door knobs, buttons, clock cases—in a thousand ways our daily life is encompassed by Dr. Baekeland's product. Even the electric lamp bulb is now sealed to its metal base with a Bakelite cement.

This phenol resinoid, to give it its technical term, is now used to 'laminate' or provide a fine layer on hundreds of articles. Lighter and less chilly than marble, it is used on shop counters, tables, walls and floors, which are made with wood veneer patterns. Even rudder posts and lee-boards for sailing yachts are made of Bakelite.

III

"Come down to the harbour," said Dr. Baekeland, with a boyish vivacity that belied his seventy-three years. "I've something that will interest you."

There was little need to add the latter part of his sentence. He had just been giving us his latest 'invention,' a Florida 'champagne,' made of orange juice which fizzed out of a soda siphon, and had proved very potent. A little headily we went down the terraced garden to the small harbour on the Bay.

"As you know, sun, rain, and rust are the great enemies of materials. They destroy wood and iron alike. We paint things with oil varnishes to preserve them. Look how sea water destroys ships, how they have to be scraped and painted continuously. I've been making experiments, and have succeeded in increasing the wearing quality of varnishes by fifty per cent., with the use of synthetic phenol-resin. But you'll see!"

At the harbour he stooped down, untied a cord, and began hauling. Several pieces of wood appeared out of the water. They were coated with Bakelite paints, and showed no signs of destruction.

"Now look at these," said Dr. Baekeland. "I have been making tests. These wooden panels were given a coat of the varnish ten months ago. Since then they have had alternate immersion in salt water by each successive high tide, and exposure to tropical sunlight. This sea water is 70° to 90° Fahrenheit—and look at them! There's no corrosion yet, and corrosion's the enemy of everything afloat. And not only will this varnish serve for ships, it will be equally efficacious for railway rolling stock, motor-cars, and aircraft."

Dr. Baekeland lowered his panels with a little chuckle of delight. Then he fished for something in his pocket.

"Some time ago I was in a nursing home, and I noticed how dirty surgical dressings and tapes and sticking plasters became. They have to be removed often merely because they collect dirt on the outside. It occurred to me then that washable plasters and dressings would be a great boon. We can treat woven fabrics with flexible phenolic resinoid which will stand washing with soap, or other cleaning compounds. So here it is!"

He gave me a thin little tissue packet containing some sticking plaster, called "Dry-bak."

"The next time you cut yourself, put on that plaster, and don't take it off until the cut's healed—you can wash the plaster like your skin."

Dr. Baekeland gave a merry little laugh, and as I examined the washable sticking plaster he became busy again with another cord. This time a packet appeared out of the water, wrapped in a silver sheet.

"Here's another idea. You see, that paper inside's quite dry. It's been wrapped up in what I call 'revolite,' a fabric processed with a special Bakelite resinoid. We are making raincoats, book covers, garden upholstery, and shower curtains with this material. You can have it in solid colours as well as in bright metallic effects. You can't get wet in a Bakelite-treated raincoat, and body heat and sun won't perish it, as happens with rubber-treated coats. You see, there's no end to what can be done with plastics."

"Plastics?" I queried, moving into the shadow of a palm, for the late afternoon sun was burning my neck.

"That's the name we give to all articles made of these synthetic substances. Nature's given us many materials—

now we've made one on which she can try her teeth. Plastics has brought a new art into the world."

"You were the first to discover it?" I asked my wizard-host, who had been wonderfully patient with my lay mind, and had never wearied under ceaseless questions.

"Oh, no, no, no," he answered. "No one is ever quite the first—all things have a growth. I have had a lot of luck in my career," he added, smiling modestly. "I suppose plastics began about 1868. Elephants and ivory supplies had run low, and there was a consequent shortage of billiard balls. Some manufacturer offered a prize of ten thousand dollars for a substitute, and a young American printer, by treating cotton cellulose with nitric acid, succeeded in producing a plastic that was called celluloid. You remember those ping-pong balls that went pop when they hit the gas jet or went into the fire!"

Dr. Baekeland gave a chuckle, and paused for a moment as we mounted the garden terraces towards the house.

"There were all kinds of tragedies, though—ladies' combs caught fire—and films. So something had to be done, and celluloid was replaced by a cellulose acetate plastic that was non-inflammable. Then I began to look for a substitute for resin and obtained an insoluble, infusible substance, between 1905 and 1909, which we called, formidably speaking, oxybenzylmethylenglycolanhydride, and——"

It ran off Dr. Baekeland's tongue so easily, that I tried it also, and failed.

"Well, you can call it Bakelite," laughed the Doctor. "And now, shall we have another drink?"

The hot Florida afternoon was drawing to a close when at last we rose to leave this most remarkable old gentleman.

He would not let me go without first presenting me with a transparent pencil, that looked like clouded amber and ivory, but, as the tiny trade mark told me, was of Bakelite. And calling me back again for a moment, he presented me with a copy of an address he had made to a scientific body inscribed "With cordial regards and thanks for your visit."

But it was I who owed the thanks, and I left that pleasant house overlooking the Bay conscious that I had spent an afternoon with one of the most remarkable men in America.

Months afterwards, home again in Pilgrim Cottage, his memory was evoked a dozen times a day: I turned on the Bakelite switch, picked up the Bakelite telephone receiver, or toothbrush, or ashtray. With Sir Christopher Wren, Dr. Baekeland might well say—*Si monumentum requiris, circumspice.*

IV

My time at Coconut Grove was drawing to a close. I had visits to make at Palm Beach, and at Orlando, where my friends Howard and Walter awaited me in their orange groves. But I must not leave, I was told, without motoring down to the Keys.

From Miami the Dixie Highway continues down towards the tip of Florida. The Dixie Highway, a name that calls up a vision of negro crooners singing songs about mammies and moonlight amid music-hall log cabin scenery, is the No. 1 road that traverses Florida from end to end. But it starts far away at Lake Michigan and Lake Huron and is three thousand nine hundred and eighty-nine miles long. It must not be confused with the Dixie Overland Highway which, two thousand six hundred and sixty miles long, is the

direct southern route across America from the Atlantic to the Pacific Ocean.

It is called Dixie not from the negro minstrel who in the cold and dreary streets of New York picked up a fiddle and composed "Away down South in Dixie," which has become the national anthem of the South. The name more probably arose from the New Orleans ten-dollar bills, before the Civil War, which had the French word *Dix* printed on them.

One sunny afternoon towards the end of February we set out along the south end of the Dixie Highway to visit the first of the Florida Keys. It was nearly two hundred miles to Key West, but our journey to this first Key was only some fifty miles. The highway stretched like a broad black ribbon through the level land. This was the great district of the vegetable growers with miles and miles of tomatoes, beans, cabbages, lettuces, and strawberries. There were also citrus groves and some banana plantations; this wide, well-cultivated land was evidently Florida's kitchen garden.

Our road and railway ran parallel. If one followed them the whole way, one came within ninety miles of Cuba. Sometimes civilisation seemed to peter out and vast tracks of pinelands, cypress scrub, and sawgrass intervened between the growers' settlements. Occasionally there was a glimpse of the blue Atlantic, but ever straight ahead ran the dark concrete road, the iron railway, the shining telegraph wires.

Mirage after mirage danced before us on that hot road. Now mangroves, sea-grape trees, and salt marshes gave place to low scrub land, and our road was bordered by wide canals on each side. At last we came to a long drawbridge which spanned a sea channel. I had the sensation of leaving the mainland of the North American continent. The bridge

seemed interminable; it was spaced by patient fishermen in swimming costumes. All around lay the blue shimmering water, lagoon-like; ahead we could see the green jungle covering the first of the Keys.

We came to our first islet and halted at Sam's Shack, where fishermen bought Coca-Cola or bottled beer, matches, tobacco, or fishing tackle. How the sun beat down! Silence lay heavy over land and water. The fishermen seemed to have gone to sleep with rods in their hands. I wandered outside the shack, and the first thing I saw filled me with nausea. It was an immense turtle which had been thrown on its back. Its fins had been pinioned by wires which were fastened to holes drilled in its shell. It lay there in the broiling sun; its small head, with protruding eyes, was thrust out on its thick neck. It seemed to me it was clearly conscious of its fate, and there was something accusative and pathetic in its mute appeal.

What were they going to do with the poor thing? I would have liked to cut the wire pinions and liberate the turtle and let it go back to its blue waters. "They will let it lie there for a day or so, or they will cut its throat if they want it at once," said my companion of the afternoon. Almost as he spoke, two men emerged from the shack and, seizing the great turtle, proceeded to carry it away, with some difficulty, its head lolling helplessly downwards, its great eyes staring, I swear, in terror of its fate.

"They are going to cut its throat," said my companion, laconically.

"Let us go on," I said, anxious to leave the scene of slaughter.

We left the translucent sea behind and plunged into a

jungle through which our road ran straight. But it became exceedingly monotonous, for we were shut in by these dense green walls which cut off all sight of the sea so near to us. Presently, after turning aside through a wide growth of bushes, we came to a clearing. Beyond a clump of pine trees sparkled the sea, and on its shore's edge stood an elaborate log-built fishing camp. A snake rapidly shuffled off into the brushwood from under our wheels and we turned in at the camp.

I am not a fisherman, but the sight of this log-hotel, with its wooden piers, its boats, the vast expanse of shimmering azure water, the long low lines of the mangrove-covered islands all formed a tempting picture. The large club room seemed filled with horrors, or delights if one is a fisherman: huge tarpons, devilish barracuda, shark, swordfish, flying fish, sailfish. One heard strange and true fishing stories, of barracudas that ripped to pieces the fish being hauled in, of ninety-pound tarpon leaping fifteen feet out of the water, being 'played' for two hours, with the reel becoming a hot box, so fast was the line run out . . . I began to feel that I might want to fish, and then that turtle's eyes killed the thought.

We turned homewards, following the trail through the flat landscape, with a sunset that seemed to have set the world on fire. Overhead, the crimson clouds rose in mountainous masses, and their colour was repeated in the roadside canals that mirrored the glowing heavens between their darkening banks. Then at last, far beyond, in the indigo flood of night gathering along the northern horizon, there shone cold, diamond lights. They were the lights of Miami, of the civilisation to which we were returning.

V

Moses waited with the automobile, the sun poured down, not a leaf stirred. I went on the verandah to take leave of my kind hostess; and never was a leave-taking so hard. We smiled, and said things neither thought could come true. Yes, I would come back next winter, when she would be well again, and she could show me a hundred things I had not seen.

I took her hand and held it, and the pressure that responded to mine gave the lie to our make-believe. One month, two months, three months, and the earthly pilgrimage would be over. Yet even in this moment of farewell there was happiness in her voice, the same delightful laughter playing in her eyes as I had known all these years of our friendship.

I found myself outside the door, with my host, and since a word would have seemed too much we drove together in silence for a time. Then, when we talked, it was of other things. And so at last we came to thronged Miami, and the railroad station with the long northbound train waiting in the sun.

I was going to Palm Beach, and then on to my friend's orange groves in Orlando. I had one more month of sunshine before me. I had begun to notice that I was taking the weather for granted. Of course it was sunny and warm! And when, very occasionally, the sky clouded, like all my companions I looked at the heavens, but while they were fearing it might rain, I was hoping it would, just once, very hard, and then be quickly over. But I dare not confess this, for it was the whim of an Englishman, who is happy with one dry day in three wet ones because he knows the increase

of beauty, the fresh colouring and lushness that come of this variation.

"All aboard!" cried a voice down the platform. I said farewell to my host, kindest of many kind people who had given me a time of great happiness, and turned to find Moses waiting for me by the steps of the Pullman car. He had thoughtfully stowed away my bags, and now stood cap in hand. Good, honest Moses, with dark, shining face and soft Southern voice! He made a little speech as I shook his hand. It was impromptu and came from his heart, and of all the kind things I shall ever have cause to remember, this good fellow's farewell words will be foremost.

"You've sure given the mistress a right happy time, suh. It was new life she took with you around to make her laugh. It won't be the same now, suh, so come again—and soon, suh, and the mistress she sure will be better an' better with you aroun'."

Never has a parting guest been speeded with a tribute more valued than this, welling so spontaneously from the good heart of Moses.

I mounted, the attendant picked up the footstool, the iron platform of the car swung up, the door slammed, and the train jangled out of Miami, drawing slowly its huge length through town and suburbs. I looked at my bronzed fellow-passengers, and wondered where they were going. Most of them were leaving Florida for the bitter North; I was only going northwards for a hundred miles or so. I felt even happier at my good fortune when, opening a newspaper, I read that ten persons had died of the cold in Chicago. North America was still in the grip of a terrible winter.

I had to pull down a blind against the sun even as I read of the Arctic conditions in Illinois.