

Excerpted from A Revolutionary Way of Thinking. From a near Fatal Accident to a New Science of Healing! By Dr. Charles T. Krebs and Jenny Brown.

Part One

EXPLORING BENEATH SKULL ROCK

*Who is this whose ignorant words
Cloud my design in darkness?
Brace yourself and stand up like a man;
I will ask the questions and you will answer.
Have you descended to the springs of the sea,
or walked the unfathomable deep?
Have the gates of death been revealed to you?
Have you ever seen the doorkeepers of the
gates of darkness?
Have you comprehended the vast expanse
of the world?
Come, tell me all of this, if you know?*

God's question to Job, Ego and Archetype, Edward F. Edinger

One.

DIVING TO THE DEPTHS

In German, my name means crab which is coincidental because professionally I trained and worked as a marine biologist, studying crabs. In the early 1970s I had completed my PhD at the Marine Biological Laboratory in Wood's Hole on Cape Cod, Massachusetts, and later had collaborated on some research projects with a gifted scientist named Kathy Burns. Kathy and I had hoped to do a lot more work together but these plans were shelved when she accepted an appointment to work in Australia.

The great island in the Southern Hemisphere had always fascinated me. When I was a small boy I had a desk in my room that had a map of the world across its surface. For some reason, I would find myself staring at this island and imagining the adventures I might have there. That fascination never waned.

So in 1980 when Kathy and her husband Robert invited my wife and me to visit them, we jumped at the chance. They had just finished building a 14-metre yacht and wanted us to join them on its maiden voyage from Melbourne on the Australian mainland south to the little island state of Tasmania.

It was a wonderful trip, and after it Ansley and I had enough time to return to Melbourne to explore the city and some of the surrounding countryside. We loved it. We loved the openness of the people and of the land. I loved the trees.

There is something incredibly emotional for me about gum trees that I can't explain because in upstate New York, where I had grown up, there were lots of oaks and maples but no gum trees. Yet somehow the sight of a gum tree, silhouetted at dusk against a big gloaming Australian sky really affected my heart. It was an uncanny feeling of being wholly connected to a place in which I was, to all intents and purposes, a stranger.

Ansley and I very much wanted to spend more time in Australia, so towards the end of our holiday I met with the director of the Victorian Marine Science Laboratory and was interviewed for a job that was due to come up in about a year.

We returned to the States and, sure enough, when the position of research scientist was advertised internationally, I applied and was duly appointed to develop a marine pollution monitoring program for the Victorian Government.

In July 1981 we returned to Australia and took up residence in the small, charming and historic coastal town of Queenscliff, where the marine laboratory is based.

I'd been working for only about six months when another couple we had met through Bob and Kathy, Alison and Peter Barker, invited the four of us to join them on their 12-metre dive boat, *The Orca*, for a week's diving off a beautiful national park called Wilson's Promontory. This is Australia's oldest national park, a huge triangle of land with a granite core that has defied the fury of Bass Strait storms to remain the southernmost tip of mainland Australia.

Alison and Peter had a hunch that on a previous trip they may have spotted the wreck of an old ship that had foundered off the “Prom” last century. They were hoping to locate it this time.

I was 35, at the peak of my fitness and keen to try anything. All through my life I’d been one of the lucky ones who had found most physical and academic endeavors easy. I had my doctorate. I was a good downhill skier. I was running three to six kilometres every day and playing A-grade basketball and volleyball. I practised karate two to three times a week and had played golf for only a week before I was shooting under 100.

A week of diving in the height of the summer sounded like heaven to me.

Off Wilson’s Promontory the waters vary in depth from 15 to more than 90 metres. They are cold and very, very clear. In one place, we explored enormous underwater rock sculptures made up of huge granite boulders, some up to 30 metres high, piled one on the other. In between were crevices and caves that we could swim in and out of. The caves were full of fascinating marine organisms; hydroids with their frilly plankton-catching feet, spectacularly colored sea stars and gardens of iridescent algae, all of which I knew so it was like visiting old friends.

It was, however the first time that I had ever swum with seals. Seals are amazing. They are so awkward on land yet are unbelievably graceful in the water and have great big, flirtatious brown eyes. The females are very inquisitive. Some would swim right up to me and poke their faces into my mask as if to ask: “What are you doing here?” Fortunately, the 250-kilogram males aren’t so curious.

I remember one wonderful moment when I was peering into a cave and found two seals looking in with me. One had tucked herself under my arm and another was leaning over my shoulder. I wished I’d brought a camera.

During that week, we had been progressively building up to do the dive to search the bottom for *The Conowara*. Alison and Peter presumed it would be about 60 metres down, about the limit of scuba diving using compressed air.

For a very deep dive you don’t just plunge in. At the surface, the air is 78 per cent nitrogen, a substance that is normally not very soluble in the blood, but which at greater pressure begins to dissolve in the blood. As you go deeper in water, which is 800 times the density of air, the scuba works by pushing both oxygen and the nitrogen into your lungs and bloodstream at increasing pressure.

At the surface there is one atmosphere of pressure. Ten metres under water the pressure is two atmospheres. At 20 metres you are at three atmospheres; at 30 metres, four atmospheres, and so on. As the pressure builds, so the air needs to be forced into your lungs at greater pressure, which means increasingly high levels of nitrogen are accumulating in your blood.

Beyond 30 metres, you actually start getting enough nitrogen to affect your brain function. In diving, this can lead to a syndrome known as “intoxication” or “rapture of

the deep". In medicine it is called "nitrogen narcosis". The common wisdom has it that at 30 metres you feel as though you've consumed one martini; at 46 metres it feels like you've had two and at 60 metres you might as well have drunk three.

I'd been to 60 metres a number of times - always in warm tropical waters - and had only ever been narcosed once. That happened when I was doing research off the Marshall Islands, a US Protectorate in the western Pacific which boasts some of the most unspoilt coral reefs in the world. There I'd been doing research on marine organisms and diving every day - a wonderful job to be paid for.

One day I'd gone to 55 metres and was trying to place some soft coral into an equally soft plastic bag. I would open the bag and then lift the coral to put it in and the bag would collapse. I'd put the coral down, wrestle the bag open, pick up the coral and the bag would collapse again. After trying this about half a dozen times I realised I wasn't being too mentally acute and when I was tempted to pat a couple of sharks that were swimming nearby, I realised it was time to get back to the surface.

At Wilson's Prom, we were diving off a landmark called Skull Rock, a single piece of granite about 60 metres high and a half a kilometre long. On one side, this rock has a huge cleft and in certain lights it can indeed look like a gigantic human skull. As it turned out, it was a propitious place to be diving.

We had planned to take our last dive to look for the wreck. The whole week leading up to it had been about progressively acclimatising ourselves to deeper and deeper levels to progressively activate cavitation points in the body that can release nitrogen bubbles into the tissues. This is the process that can lead to a condition known as the bends.

On that last day, January 22, 1982, Alison, Peter and I suited up, strapped on our tanks and dropped a buoy line over the side. It stopped at 60 metres. We plunged in and as we went down the line, pulling ourselves hand over hand, we entered the ethereal world of the deep sea, a mysterious, silent realm with eerie lighting. As you go down, the clear blue of the surface water melts into a darker, deeper green.

We swam down for several minutes and at about 53 metres, found ourselves swimming through an extraordinary thermocline - the demarcation between a warm layer of water resting on a cold layer of water. The difference in temperature between the layers was about 10 or 12 degrees Celsius, so sharp that it was like crossing some invisible marine border. I could reach my hand down into the cold water below while my body was still in the warm water above.

Once we got through the thermocline, we were beyond any trace of plankton and the water underneath was incredibly clear, some of the clearest water I had ever seen. We could see 30 metres ahead. We could now see the bottom and here again were these boulders and caves, a few bottom-dwelling Port Jackson sharks and myriad brightly colored marine creatures encrusting every surface. At the bottom we all stopped for a few moments, staring in awe at the underwater world.

We synchronised watches and went off in different directions to search for the wreck.

I spent my time inspecting in and around some of the bigger boulder formations. Swimming over the shoulder of one rock, I must have plunged down about four metres, which meant I was at about 65 metres: deeper than I had ever been before.

Suddenly, I started to feel incredibly anxious. This is an aspect of nitrogen narcosis that is not often mentioned because divers are supposed to be tough, adventurous types.

But I found myself panicking for no reason that I could rationalise, and of course when you're panicking you breathe more quickly and deeply. It probably lasted only about 20 seconds and fortunately, I saw Alison was quite close by. To gain some comfort from the gripping state of panic, I swam towards her and as soon as I touched her shoulder, the anxiety passed as inexplicably as it had come on. Feeling pretty stupid, I tapped my watch to indicate that we only had about 10 minutes left before we were due to surface.

We didn't find the wreck so we regathered and started swimming slowly back up the line, stopping on the way to breathe and rest. The purpose of decompression stops is to allow that excess nitrogen to be degassed from the blood, out across the lung membrane and into the breath. We spent 15 minutes at 18 metres and half an hour at 10 metres, so by the time we got to the surface we had, theoretically, exhaled all the nitrogen.

By the time we got to the last decompression stop there was a lot of movement on the line. It was getting turbulent at the surface and holding the line made us sway around quite a bit. I began to run out of air. I must have used a lot of air up in the panic attack, but it presented no real problem because Peter had an extra breathing device on his tank so I was able to breathe off his rig.

We got to the surface, clambered back on the boat and were talking excitedly about what a spectacular dive it had been, even though we hadn't found the wreck.

I went to pull my wetsuit top over my head and "Wow! Jesus!" A sharp pain in my right elbow. A type one bend - a joint bend. Even though it was the first time I'd ever experienced one, I knew what it was.

Consider how bubbles form in carbonated soft drink when you take the cap off and release pressure suddenly. A similar thing happens in the body to cause the bends. If, after you've pushed all that nitrogen into your blood but haven't degassed it properly from your blood, it can be released inside your body.

When you extend your arm or leg, the excess nitrogen pops into a bubble inside synovial fluid of the joints. It puts pressure on the surrounding tissues and because that pressure hurts, you tend to bend your limbs in close to your body to contain the pain - thus they are fittingly named. I had the bends.

Realising this, Peter and I made a decision to do what is called a wet recompression. We put our wetsuits back on, grabbed two new tanks of air and jumped back into the water. We went down again to 10 metres and the second we got

there, my elbow joint stopped hurting. We stayed at this depth for another 30 minutes, just breathing and looking at each other. It was pretty boring and it was getting cold so after we'd done the requisite time, we followed the stream of ever-expanding bubbles back up to the surface.

Apart from the fact that I had been in the water now for a couple of hours, I felt great. I went into the cabin to make a cup of tea and noticed on the shelf a medical book on diving. As I had just experienced a bend, I took the book down and started reading. The book said type one bends are by far the most common, and although they are painful this should disappear within eight to 10 days as the nitrogen is slowly absorbed out of the synovial fluids, back into the blood and then breathed out. They weren't life threatening.

Then I started reading about type two bends - cerebro-spinal bends. These are less common but much more dangerous, the result of nitrogen bubbles forming inside the spine. Because the spine is a bony cage, nitrogen bubbles that form in it can only expand by crushing the surrounding tissue. If a bubble gets big enough it can also block the blood flow, which leads to hypoxia, or oxygen starvation, and the neurons begin to die. The same thing can happen in the brain. According to the book, type two bends were potentially lethal.

I was reading this technical detail with some interest when I realised I needed to take a pee. One of the other details mentioned in the book about cerebro-spinal bends was that when it is starting to happen, you can get the staggers. Because motor co-ordination is affected, you start to stagger about like a drunk. But the clincher is that you cannot pass urine, which indicates that some of the function of the spinal column is beginning to shut down.

As I started to walk to the boat's toilet I was surprised to find I was terribly uncoordinated. When I attempted to pee but found I couldn't. Oh no! Type two bends. I had both symptoms. I came out, staggered over to Peter and said: "I think I'm in a bit of trouble here."

As it happened, we had already weighed anchor and were heading in to Tidal River, the only settlement on Wilson's Promontory. There we were due to meet up with a doctor friend, David Iser. We radioed him to get to the rendezvous point as quickly as he could; I suspected I was coming down with type two bends.

David immediately told us to contact two other doctors, Geoff Macfarlane and Paul McCallum, who run a medical clinic at the nearby regional centre of Bairnsdale. Because they take care of the abalone divers and deep sea divers who work on the oil rigs off the far eastern coast of Victoria, they know quite a bit about decompression sickness. Geoff Macfarlane suggested that I be taken straight to the little medical centre near the Ranger's station at Tidal River and there be put straight onto pure oxygen and five per cent Dextrose, an intravenous sugar solution.

"Great", I thought. "Once I get there I'll be fine. This is all very interesting but it'll be over in a little while."

Geoff Macfarlane said he would arrange for a helicopter to fly me out to the big Esso barge, *The Polaris*, that was anchored about 45 kilometres away. He would meet me there. *The Polaris* had a big decompression chamber on board.

After motoring through rolling seas for an hour and a half, we finally got into Tidal River and by that stage I had the staggers pretty badly. Getting me off *The Orca* and into a dinghy was quite a challenge with the see-sawing of the two vessels in the two-metre seas.

On land I was shaking violently with every step but I still had to feel sorry for the doctor who was temporarily resident in Tidal River to look after the summer campers. He knew very little about the bends and when he saw me coming towards him he could only wonder if he was looking at an emotional basket case. He asked me if I was hysterical. “No,” I said, “I always walk like this.”

We got into the surgery and this doctor was in such a flap that he couldn’t get the oxygen tank organised. Fortunately my friend David arrived and took over.

He was just in time. I was in agony. I’d been in cold water for hours, had been drinking copious amounts of tea and couldn’t pee. I tell you, if ever you want to torture anyone, all you have to do is pinch off their urethra and make them drink a couple of litres of water. A bursting bladder with no outlet causes the most excruciating pain imaginable.

There was nothing like a catheter in this out-back surgery but I was begging for somebody to do something - anything. David offered to give me an abdominal puncture to relieve the pressure. He took a big bore needle and stuck it through my abdominal wall into my bladder, without an anaesthetic. A stream of urine exploded across the room. It was the kindest cut of all. A tube was taped to the needle and my bladder could drain. At last I was beginning to feel a bit more comfortable.

An hour passed. Slowly, I could feel my feet were becoming paralysed. I could rock them a little bit from side to side but couldn’t lift them. Then I found I couldn’t bend my knees very much.

A helicopter arrived on the beach. I could hear the rotor blades cutting the air. I waited. Then about half an hour later I heard it fly away again. The radio call to get me a helicopter had been intercepted by two operators: the Esso rig helicopter and the Melbourne-based air ambulance service, the Angel of Mercy. The Esso helicopter, half-way out to the rig with an exchange crew and a full load of supplies on board, was about to turn back for me when the Angel of Mercy offered to take over the emergency lift.

The Angel had landed on the beach at Tidal River expecting to take me back to a small decompression chamber at the Prince Henry’s Hospital in Melbourne. When Geoff Macfarlane was contacted about this he said: “Don’t let them take him. They’ll kill him.” The hospital’s chamber wouldn’t be able to do the deep decompression that he needs.

The Angel had no pontoons, therefore it couldn't fly over the water to land me on the barge. So the Angel flew away.

Meanwhile, the rig helicopter had made it out to the platform, unloaded one crew and all their gear and picked up another crew to bring back to shore. They had to fly back to their base, unload, refuel and then return to get me at Tidal River.

I had now been lying in the Tidal River surgery for three hours. It was five hours since the dive, and during that time my legs had become paralysed, my abdomen had become paralysed, my arms had become paralysed and my chest had stopped moving.

I had taught anatomy at St Mary's College at the University of Maryland and I knew that the paralysis was up around vertebrae C6 or C5 in my neck. I couldn't remember where the phrenic nerve came off the spine but I was desperately trying to recall the fact because this was the nerve that was now keeping me alive. This was the nerve that was running my diaphragm. Where did it come off the spine? C5? C4?

Until this moment I had been making subjective observations of my state. Once my chest stopped moving and I realised I was only breathing diaphragmatically, I knew I was within centimetres of death. Now I was frightened. If it went any further I was going to die. When the phrenic nerve stops, that's it!

I heard helicopter rotors again. Praise the Lord!

But even as the noise of the helicopter faded into the distance, Kathy Burns and Dr David Iser were walking along the beach. David said to Kathy, "I don't think he's going to make it".

I have to hand it to the helicopter pilot who flew me out to the rig because one of the things that happens as you gain altitude is that the nitrogen bubbles will keep expanding and I was already in lots of trouble. He didn't have to go very high to kill me. I was lying on the floor of the helicopter and it was flying so low over the water I could see the white caps on the waves virtually at eye line. The chopper actually had to fly up to get onto the barge's platform.

The enormous diving barge we landed on was a fairly unique vessel to be where it was at that time. Measuring about 300 metres long and about 100 metres wide, *The Polaris* carried a 3200-ton crane, used to lift oil platforms and position them on the ocean floor. It also had a saturation chamber, one of only two in the world. The other was in the North Sea, off the coast of Scotland. The saturation chambers on these barges operate in a way that streamlines the otherwise very expensive and dangerous business of building deep-sea oil rigs. It is used by the divers who weld and bolt steel deep underwater.

The danger in decompression isn't so much the fact of having nitrogen in the blood, it is when those levels change suddenly and produce the bubbles. When the original oil rigs were being set up to drill in the off-shore oil fields, stables of divers would be housed on the barges because they could only dive to the deep and work for a couple of hours before they had to resurface and undergo a long decompression. After each dive, the divers would rest for a day and a half and then go down again to

work for another few hours. These guys had to be decompressed every time they came up and the danger point in the process is always the decompression.

To economize on the costs and the energy, and to minimise the decompression risks as much as possible, a system known as saturation diving had been introduced. On *The Polaris* there was the one big decompression chamber measuring about nine metres by three metres and it could house four divers who would work in rotation for periods of up to 28 days.

If the divers were working at 80 metres, the chamber and the diving bell (their commuter vehicle) would be pressurized to the same level on helium-oxygen, which is less dangerous than the nitrogen-oxygen in air. Two divers would work underwater from the bell and after shifts of four to eight hours, would come up into the saturation chamber and the two fresh divers would replace them and go down to work. This system meant the divers only had to be decompressed at the end of every 28-day shift, and they were slow, conservative decompressions.

Even so, keeping divers in these situations is similar to keeping someone alive on Mars. If you are living at seven atmospheres of pressure inside the chamber, all the helium oxygen has to be regulated, so does the carbon dioxide and the moisture content. All the food and provisions come in and go out via air locks. All systems have to be monitored by a crew of four around the clock because if anything goes awry, the divers inside can die very quickly.

When I was landed on the rig, Geoff Macfarlane put me straight into the diving bell and it was pressurized steadily to a standard decompression depth of about 50 metres. After a few minutes at this depth I began to get some feeling back into my fingers and toes. I began to be able to move my arms, just a little. It was looking promising and I was thinking, "That's good. I'll just get decompressed and my body will come back on line."

The theory was that having been recompressed I would slowly be bought back up to surface pressure in stages to make sure all the nitrogen was out of my blood. I was going to be fine. But by the time we'd got back up to 30 metres of pressure, all of a sudden all my body movement went again. In an instant I was quadriplegic. I couldn't feel or move anything below my neck.

Because I had been so long with the nitrogen bubble in the neck, the blood clotting mechanism had done its work. The blood responds to a bubble in much the same way that it responds to a wound, and a clot had formed around the bubble that had lodged high in my spine. When I first went into decompression, the bubble had collapsed, but soon after, the solid clot had moved forward and was now plugging a major spinal artery. My spine was getting no oxygen at all. It was the worst of all possible situations.

Geoff Macfarlane directed that I should be immediately moved into the decompression chamber proper and here was another moment of synchronicity: that chamber is usually occupied by divers around-the-clock but now, through sheer

coincidence, it was free. The crane operators, who belonged to different unions, were on strike over a demarcation issue. The divers were out chipping paint.

So I was moved in and with me came Geoff Macfarlane and a rig diver called Johnny Sullivan who had volunteered to help handle me; move me, wash me and feed me, the quadriplegic. Geoff directed that we should go to pressure of relief. So down we went again, slowly descending through two atmospheres, four atmospheres, five, six...seven.

Sometimes, when you go to a much greater pressure, you can get relief from symptoms because suddenly the blood can start flowing again, but by the time we'd reached 92 metres, or 10 atmospheres, Geoff said there was no reason to go any deeper; it was not going to make any difference. I could talk. I could move my head but I couldn't move anything else.

I didn't know this at the time, but even more synchronous events were colluding. Before we'd gone into the chamber, Macfarlane had called Dundee, Scotland, and talked to a colleague, Dr Phillip James, who took care of the North Sea divers and was an authority on decompression sickness. The two had met in England only a few weeks before my accident and had been tossing around a few ideas about possible alternative treatments for cerebro-spinal bends and other spinal conditions. One of their theories was that it might be possible to keep spinal tissue alive by using very high oxygen levels in a hyperbaric chamber such as the one we were in.

During this night's call they had decided that for me, maybe it represented a chance. Maybe they could give it a go. Macfarlane said to me: "You're quadriplegic." I said: "You don't have to tell me that. I recognise that if I can't move my arms or my legs it usually means I'm quadriplegic." He said: "It is my feeling, based on hundreds of decompressions like this, that if we go back to surface pressure now, you'll be quadriplegic for the rest of your life. There is a possible treatment that we can try but it has never been tried before. If it works, you may regain a lot of function. If it doesn't, you'll die. I'll give you a couple of minutes to think about it."

He left me there and all of a sudden the shock hit me. I turned my head to the wall. Hot tears were running down my face.

Here it is. What are you going to do? My mind was thinking, "My God. I'm a quadriplegic. I can't move anything. What am I going to do?" I tried my best to take a positive view. I thought about all those incredible people who can do amazing things despite their physical disabilities. People who can paint wonderful pictures holding paintbrushes in their teeth, and the disabled academics like Cambridge physicist Stephen Hawking who can still communicate his amazing ideas to the world via computers.

My mind was still working. I still had all my scientific knowledge. What kind of things might I be able to achieve if I had to go on as a quadriplegic? But the bottom line was, for me to have any life at all, someone - be it my wife, or a nurse - would have to give up a large part of theirs. I wouldn't be able to do anything for myself. Nothing. As positive as I was trying to be, I couldn't get away from the depressing fact that compared to what I had been before, it wasn't going to be much of a life.

I had no sensation in my chest but the heaviness in my heart was unbearable. Why do I deserve this? What have I done to deserve this?

I called Geoff back. "Look," I said, "one of the most depressing things about being a quadriplegic is that you have no choice or control over your life. You can't even end your life, even if you want to. All you can do is hold your breath until you turn blue and even then, you'll start breathing automatically."

"Go for it. We'll roll the dice and see what we get because I'd much rather have more than I have now, or nothing. I'm willing to take the chance. I would rather be dead than half-alive."

It sounds amazing now, but at that point I still had a choice, something most people in similar situations never get. I had another chance. What was equally hard was that because I was sealed inside the decompression chamber 45 kilometres offshore, I couldn't even talk to Ansley back on land. Whatever decision I made would affect her profoundly: If I chose to live as a quadriplegic, it would totally change her life and if I died, that would affect her too. I couldn't talk to her. I couldn't talk to anyone.

Macfarlane said it had to be now. I was right on the edge and if they were going to be able to save anything, we had to start immediately. We were at 10 atmospheres of pressure on 10 per cent oxygen and 90 per cent helium. Effectively every breath we took had 20 to 30 times as much oxygen as we would normally breathe at the surface. What was required now was to increase that level even more to diffuse oxygen across and into the starving spinal tissues to try to keep the neurons alive until the clot could be dissolved by medication. It was going to take up to three days to dissolve the clot and I didn't have three days to gamble with. By that time my spine would be dead.

The theory had never been tested. We were flying by the seat of our pants.

An oxygen mask was put over my mouth and nose and I started to breathe a mixture that contained about 200 to 300 times the level of oxygen that human beings normally breathe. It was so much oxygen that every time I took a breath it seared my lung tissue and hurt like hell. For 40 minutes every hour I had to breathe air that burned like fire. Then I'd have 20 minutes off the mask. It went on day and night. Every time the mask was presented to me, I recoiled. Could I handle another 40 minutes of agonising pain?

Macfarlane said: "Charles, I know we're pushing oxygen toxicity. I know we're burning the surface of your lungs but we have to have the maximum oxygen we can get in there to save as much of your spine as we can. You're just going to have to bear it because if you live, your lungs will repair themselves. If you don't... it won't make any difference." He didn't mince words.

I lost track of time. I didn't have a watch and couldn't have lifted my wrist to look at one anyway. Maybe it was 24 hours, maybe it was 48, I don't know. What I do know is that at the end of the treatment I began to get movement back into my shoulders and arms. Movement, but no sensation of feeling.

Gradually, so gradually, I was beginning move again. I could hardly believe it. At first it was gross motor movement. When I first attempted to move my arm I found I had no control. Once I got it going I couldn't stop it. In fact, if I lifted my hand toward my face, I would strike myself quite hard on the forehead.

I was flailing about as though I had cerebral palsy but at least it was an indication that some of the tissue in my spine was still alive. It meant that perhaps I might only be paraplegic. The clot had dissolved and the blood flow in my spine had returned. The damage that had been done was done. At least no more was being caused.

The first day I came off the oxygen mask I was moving my arms uncontrollably. The following day I could at least stop my hand from striking my face, even though I wasn't too good at direction. By the next day, I had gained enough control to bring food to my mouth. I could pick up a bread roll and bring it up to my head where it would strike my cheek or my ear. Butter would smear all over my face as I moved the roll clumsily towards my mouth. It was messy but I could feed myself. The first time I managed to do it I cried like a baby because it represented such an incredible breakthrough. It meant that I wasn't going to be utterly dependent on somebody else for the rest of my life.

Every day I found I could move a little bit better and every movement was fantastic. By day five I could take a drink by myself. But because I'd damaged the nerves that controlled the sense of touch in my hands, senses that I haven't fully recovered to this day, I had no idea how much pressure I was applying to an object. And if I looked away for a second I couldn't tell whether my wrist was tilting. I would crush styrene cups, or drop them, and if I wasn't concentrating, would tip the liquid all over myself.

Each day Macfarlane would test me neurologically for the return of sensation and function. He would take a pin and prick the skin down my body, starting from my neck until I ceased to feel the prick. Every day he would progress further down my body before sensation was lost. At first the sensation travelled down my arms to my elbows and down my chest to my pectorals. Then it went down my forearms to the back of my hands. Sensation has never returned to my palms.

By day six, the sensation of feeling had progressed to my waist, then down my right leg. My left buttock and left leg still do not have normal touch sensation. At this point the chamber, which I had only half-jokingly been calling "my tomb" had served its purpose. We began the slow decompression. It was going to take another four days, a long time to be lying in one place. Macfarlane, Sullivan and I had been together in that small space day and night for nearly a week and had pretty well run out of stories.

Sullivan had gone into the chamber expecting to be in there for a day. He'd planned to go out surfing the next. Little did this young, blond man know that he was going to score the role of nursemaid - bathing me daily and attending to my every need. He did whatever he could to make me comfortable. And it was his daily job to wash the entire chamber, from top to bottom with an anti-biotic solution to prevent extensive bacterial and fungal growth that was encouraged by the warm temperature,

high oxygen and moisture in our otherworldly environment. He was a big, affable Aussie bloke with a heart of gold. I was deeply touched by his warmth and openness.

Macfarlane was a complete contrast in character. With his neat, jaw-rimming beard and craggy features, he showed the strain more than Sullivan. He was a man in control. I sensed he knew what he was doing and I trusted him totally. I sensed he was intense, as I can be at times, but he was unflagging in his support. Macfarlane and I had many extensive discussions about what was happening to me physiologically and neurologically. He would highlight every milestone I reached, telling me quite factually, exactly what was happening in my body.

When we ran out of conversation, I made an attempt to read a book. To understand my condition more fully, I grabbed for a book on the medical physiology of decompression sickness. I couldn't feel the pages and had great difficulty with co-ordination, so I couldn't turn them very easily. It would take me so long to turn a page that by the time I managed it, I had forgotten the sense of the last paragraph. I didn't want to turn back again because that would take me just as long, so I gave up reading and instead did some very gentle shoulder exercises on a trapeze the riggers had built for me. It was put up above my bed so I could at least lift myself.

I also started to practise writing again. I found that despite the loss of touch sensation, I could hold a pen. But all my motor patterning had been disrupted so I had to learn all over again how to write, how to even make the letters: For hours I sat there with a pen and a notepad, scribbling the letters of the alphabet: *a,a,a,a, b,b,b,b, c,c,c,c.*

The exhilaration of each tiny moment of progress was great but it was just as rapidly offset by the distraction of the physical discomfort that was arising. I hadn't been able to take a shit for all that time. I was paralysed from the waist down and unable to push. Macfarlane and Sullivan could use the toilet in the chamber, but I couldn't and they weren't able to give me an enema because it would have been too dangerous to risk exposing bowel bacteria to such an oxygen-rich atmosphere. I was increasingly uncomfortable but at least I knew I was on my way back to the surface.

No one had ever undergone such a long, deep decompression and on the last day - day 10 - I remember watching this huge dial in the chamber as it moved incrementally from 30 feet to the surface. I also remember how arresting it was to suddenly realise that Sullivan and Macfarlane didn't sound like Donald Duck after all. As the helium content had come down, so had our voices dropped, from castrati to baritone.

It was a bizarre transition that didn't completely mask the fact that those two guys had taken an incredible risk for me. In undergoing such a long compression and decompression they had taken the gamble of becoming bent themselves. They had willingly risked their lives to save mine.

I also owe my life to Esso (Exxon) for providing the manpower, facilities and funds to run this incredible rescue operation which I found out later was estimated to have cost \$3 million. Helium is quite an expensive gas and every time dirty towels or food went in our out of the chamber \$100 of helium was released. The only trouble with being a \$3 million man is that you don't get any bionic parts.

Finally, after the longest day I had ever known, we got back to surface pressure. The doors of the chamber were opened and I was carried out on a stretcher into the midst of a bunch of burly divers who had been outside all the time, rooting for me. When I emerged they all started clapping spontaneously and at that point I experienced the most profound moment of love I had ever known. All I could see coming from the faces of these men was pure love. It was my first point of recontact with the outside world.



Fig 1.1. After a record 10 days in decompression Charles Krebs emerges from the chamber.

PHOTOGRAPH COURTESY OF THE HERALD AND WEEKLY TIMES.

During all those long days *The Polaris* had been slowly moving towards the shore and when I came out of the chamber Ansley was able to come aboard to see me. Although she was trying to keep a brave face, she couldn't contain the shock or her tears. Her husband had been delivered back to her as a cripple.

I was transferred to Bairnsdale Base Hospital to stabilise for a couple of days before being moved down to the Royal Melbourne Hospital where, on February 7, I spent my 36th birthday. Some good friends came in to share it with me. One of the presents I received was a T- shirt with the word "Jogging" printed on the front. It was a generous gesture but what could I say? I was a paraplegic. The most I could do at that stage was to stand up with support and by locking my legs until they collapsed on me again.

After a couple of weeks under observation at the Royal Melbourne, I was transferred to the Royal Talbot Rehabilitation Centre, where I shared a ward with eight other people, all of whom had suffered major spinal or head injuries. The centre was a long commute for Ansley, so she was only able to visit a couple of times a week. Apart from trying to support me, she was undergoing her own traumas. She had experienced a tough childhood; she had only recently buried her mother and was a

new resident in a strange town in a strange country. She wasn't by nature as self-sustaining and outgoing as me. She was lonely, bereft and having great difficulty coping.

Even in the best of circumstances it is difficult for the mate of a profoundly injured person to cope: not only is their partner physically injured but they too are psychologically affected to an enormous degree. I was angry, depressed, self-absorbed and traumatized and it took me a long time to see she was having a terrible time, too. She would come and see me and be as supportive as she could but I was so self-focused, so obsessed with a determination that I was going to walk again, that I couldn't see the stress she was under.

My parents, too, on the other side of the world, were having their own understandable reactions to suddenly finding they had a crippled son. I remember the first time I managed to get myself out of bed and into a wheelchair without aid, I was so elated that I rang my mother in the United States. It was another major breakthrough for me, another major marker that indicated I was reducing my dependence on other people.

"Guess what, Mum? Today I got myself from my bed to my wheelchair without any help at all!" There was no reply. On the other end of the line all I could hear was my mother crying.

The doctors had told me I would never walk again because the nerves running into my legs had been too badly damaged. But I made a conscious decision that I was going to give it one hell of a shot. If the only other choice I had was to spend the rest of my life in a wheelchair feeling hard done by, I was going to try. I remember the day, lying in my bed looking around the ward, and saying to myself: "Move legs". They didn't move.

Why me? Why me? Why me? I had two choices: I could lie in my bed and piss and moan about why me and how unfair it all was. That's what most of the other people in my ward were doing. Or, I could give it my all.

For the first few weeks of my rehabilitation I would spend an hour in physiotherapy and then be put back into my bed. "There's got to be something else I can do because at this rate I'm not going to make any progress."

I had studied karate for a number of years and when you get to the higher levels of martial arts you begin to work with an energy known as *Ch'i*. I knew that when I broke boards and tiles with my hand, I wasn't using sheer physical force, I was using *Ch'i*, projected from my mind through my hand. I also knew my anatomy and physiology from teaching at university for eight nine years, so I knew all the muscles and nerve pathways in my body. While I was lying in my hospital bed, I started doing something that I didn't know had a name, but which I now know is called "creative visualisation."

I would pick a muscle in my leg that didn't work, which was pretty easy because none of them did, then I would visualise *Ch'i* in my mind as an electric charge and mentally project it down the visualised nerve pathways to a specific muscle. When I

got to the damaged area in my neck, I would visualise the Ch'i smashing through the blockage. I focused everything I had on this process and pretty soon I was able to make the selected muscle flicker. Once I could make it flicker, just a little bit, I could then use physiotherapy exercises to make it stronger.

It had already been a month since my accident so my muscles were fairly atrophied. Yet I had a lot going for me. First, I was incredibly strong-willed. Second, I knew about Ch'i and how to direct it with my mind. Third, I knew my anatomy and physiology inside out and fourth, before my accident, I had been in phenomenal physical shape. I had been so fit that even after weeks of paralysis I had muscle tone that allowed me to detect the merest flicking in a muscle.

Every day after that I would go down to the physiotherapy gym and work out for seven to eight hours. I remember one Sunday wheeling myself into the gym and one of the nurses asking me, "What are you doing here?" I told her, "I'm here because I don't want to be in this hospital for a minute longer than I have to be." I wanted out. I wanted out of there real bad.

Working out took all the willpower I could summon. If I was working on my hamstring, the muscle running down the back of the thigh that lifts the heel towards the butt, I would lie on my stomach and visualise the Ch'i coursing down towards the muscle. Then I would attempt to activate the muscle and lift the leg slightly. The effort of raising my leg just a few centimetres off the table would make me sweat and shake. I'd collapse until I could recover my energy sufficiently to try again. I'd lift my leg, maybe a centimeter or two more, then collapse in a sweat. I'd try again, lift a little higher and collapse.

The next day I'd start the whole set again and keep doing it until I finally managed to get my leg all the way off the table. As soon as I could do that, I'd put a half kilogram weight on my ankle and I'd be right back to sweating and shaking and progressing by a few centimetres at a time. Once I could lift half a kilogram, I would double the load. Lift, sweat, shake, collapse. Then two kilograms, then three. Every time I increased the load I'd be right back at the start; sweating, straining and collapsing. When finally I could manage to lift my leg 10 times in a row under a five-kilogram weight, I'd start the process all over again on another muscle.

I worked out in this manner all day, every day and as I began to get more strength in my legs so I began to regain some of my dignity. I was able to get myself in and out of the shower chair. I could go to the toilet without help. I began to look around at the other people who were sharing the ward. There was Ben in the bed next to me. After he had undergone surgery for tumors on his spine this young man was in a total body cast - in plaster from his neck to his knees. He'd talk to me about how he was going to take up karate once he got out of hospital. I knew that his prognosis was far worse than he was letting on.

There was Tom who had been riding his motorcycle on a very hot day. When he was within a few kilometres of his home, he removed his helmet to cool off a bit and had an accident that had left him severely brain damaged.

There was another young man, a dentist and champion distance bicycle rider who had suffered a massive stroke that had affected his mind so that he could no longer remember anything. He was in beautiful physical shape but mentally he was totally disabled.

I remember watching these young men and thinking whatever the new challenges my own situation presented, I was far better off to have a spinal problem and still have an intact mind, than to have a healthy body and a damaged brain. "Thank you Lord. I would rather be in a wheelchair and able to think than to be able to run and not think." I began to get some perspective on my life. I began to recognise that I had a lot to be grateful for. It could have been a whole lot worse.

I was making slow but tangible progress. After four months in the rehabilitation hospital I was getting enough strength in my leg muscles to be able to stand and shuffle. I progressed from a wheelchair to a walking frame and being upright was a real triumph. The first time the physiotherapist saw me standing up she said, "Gosh, I didn't realise you were so tall."

I had to practice balancing again and had to try to remember how, exactly, I used to walk. When I first tried it, I walked, or shuffled, homolaterally. That is, when I moved my right leg I would move my right arm and when I moved my left leg I would move my left arm. That's how scrambled my nervous system was. But, God, I was up and going again. I set a new goal. I was going to walk out of the hospital without a walking frame.

By the fifth month of rehabilitation I had progressed to two arm crutches and all the time was getting better at balancing. By the sixth month I was on two walking canes. I was able to walk out of the hospital -- not very fast, not very steady. I walked out to pick up the pieces of my shattered life.

During all of those months Ansley had been going through her own trauma, yet I was still so self-focused that I wasn't able to give her the support she needed. Within a few weeks of arriving home I dared to realise that she was so stressed by everything that had been happening to her, and to us, that she could no longer cope.

When a situation exceeds your ability to cope mentally or emotionally there are only three courses of action open: You can leave and get yourself away from the stressful situation; you can go crazy (another way of coping); or you can kill yourself. Of those three options, leaving was by far the best thing to do. She knew it and I knew it.

It was going to be hard on me but we knew that if she stayed we would only end up hating each other. It was a horrible option for her because there were so many implications of guilt that she would carry away with her but there was no other choice. At least, if we severed the relationship here, we might be able to preserve our friendship and the memory of the love we had shared during our seven-year marriage.

Ansley left and moved to Melbourne. I stayed on in the house in Queenscliff. I was still pushing my progress like a person possessed. I made it to moving about on one cane and I started to be able to drive a car again. Yet, because I had a syndrome

known as “foot drop”, and because I couldn’t react physically very quickly, any little irregularity on a walking surface would cause me to catch my toe and fall. I would fall down maybe 15 to 20 times a week. I got really good at falling and would rarely hurt myself thanks to all those years of karate training.

Still, it would take me at least half a day to get going. Everything was so hard. To get out of bed was a major effort. To get into the shower and dry myself was a major effort. How do you dry your feet when you can’t bend over to them? Getting dressed was a major effort and I was having to catheterize myself about four or five times a day. Everything I did took such an unbelievable amount of time that it would be 11am before I was organised.

It was so frustrating but at least I was able to go back to work for half of each day and that put me back with people again, back to some feeling of being useful. At the laboratory, I picked up a desk job, organising a major literature review looking into bio-monitoring.

As I started to get further and further into this task, I began to realise that something was very wrong with the way my brain was working. The residue of the cerebro-spinal bends was showing up a new aspect. Where at first all my overt problems had been generated by the spinal damage, the cerebral or brain damage I had also suffered was beginning to show up. It hadn’t been apparent until then because the damage was fairly subtle, affecting my frontal lobes. But I needed to use abstract thinking on the literature review project and this was exactly where the new problems were manifesting.

As I moved on into the project it became increasingly difficult, so I applied for time off. Time that I would use to go home to visit my family in America and time, I hoped that I could use to redress the mental scramble. I was going to be fine in just a little while. I flew home to Glens Falls in northern New York State and though it was obviously very difficult for my parents to see me as crippled as I had become, they were happy to see me and I was very, very happy to be able to spend some time with them.

To this day, I find it hard to comprehend why I didn’t stay in the US. I had no wife, I wasn’t sure about the job I was doing, yet I had a compulsion to return to Australia. Maybe it was Ansley. Maybe she needed me after all. Maybe I wanted to pick up my life. Maybe, if I’d stayed with my parents in that very supportive environment, I wouldn’t fight so hard. Maybe I would slide into dependence. I just had a sense that for my own survival I had to go back. My mother knew it too. As hard as it must have been for her to hold back, she didn’t ask me to stay.

So I went back to Queenscliff, back to work and back to the project. Within a very short time, however, it became clear I wasn’t going to be able to do it. Before my accident, whenever I had needed to write anything up, I had simply reviewed all the literature, lodged the data in my brain and then selected the major themes to argue my case. It had all been very easy. Now, I was gathering the information all right but I couldn’t organise it. I was left floundering in a sea of facts and I was having to negotiate longer and longer deadlines.

One day my boss, Alan Bremner, called me into his office and said, “Charles, you’re going to have to accept that there is something wrong. I’d like you to have a neuropsychological assessment. I think it’s important that we’re realistic about what is going on because there is clearly a difference between your performance now and the way you were working before your accident. You’re going to have to face it.” The test showed, that as well as spinal damage, I had indeed suffered damage to my frontal lobes. Brain damage.

Deceiving yourself can help you marshal the will to go on, determination you may not have been able to summon had you really faced the cold, hard facts straight up. For all those months in the hospital, for all those months out of the hospital, for the entire year that has passed since the accident, I had been lying to myself that all my problems were the result of spinal bruising and that when it went away, I would be fine again. I had repeated a mantra to myself: “I’ll be back to myself soon. I’ll be back to myself soon. I’ll be back to myself soon.”

Now, being confronted with the results of the neurological test, my feet had been kicked out from under me again. I was devastated. I was virtually being told that I was going to be like this for the rest of my life. I couldn’t kid myself any longer.

According to neuropsychological theory, six months after major damage you have seen 90 to 95 per cent of all the improvement you are ever going to see. I was a hell of a long way from walking normally and now I was being told that in some sense, I was also a mental cripple.

I had never failed at anything - ever - and here I was failing one test after another. Failing again and again and again. It was the greatest lesson in humility I had ever faced. For the first time in my life I began to have compassion for other people, who like me, were trying as hard as they possibly could and yet were failing. It was recommended to my employers that I be placed on extended sickness benefits for six months or a year, and then be reassessed. Instead of that I was retired permanently. My job, which would be held for me had I been granted extended sick leave, was now gone. It had been reclassified into another area.

My career was taken from me. My wife had left and I now had no job. I even had to get rid of my dog because he was young, strong and boisterous and I couldn’t walk him. My mental and physical abilities had been compromised. My dreams were gone. I was crushed. I had no vision about where I could go in life. I could envisage no future for myself.

All the mechanisms I had previously employed to cope with stress involved physical explosions of energy. If I ever got frustrated or angry I used to run farther or play basketball or volleyball harder. But now I had 10,000 times more stress in my life and no way to ventilate it. I had to work out some new way of dealing with incredible levels of frustration and emotional pain. I started to cry. Day after day I would wake up in the morning and cry until lunchtime.

I plunged into such a deep depression that I couldn’t even make a list of things to do, much less do anything. I’d wake up and cry every day until there were no more tears left. After I’d exhausted myself I would attempt to get going again, try to keep

my house in some semblance of order or go out shopping to get some food and provisions. That was just as bad.

I still walked so poorly and fell over in the street so often that I would attract attention to myself. People would either come over to try to help me, which was a caring gesture, I knew, but it simply compounded the fact that I was a cripple. Otherwise, they would watch me stagger and fall and presume I was drunk which called forth other reactions mostly of condemnation.

I had other physical problems. My bladder was a problem as was my bowel. I had to pee all the time and if I couldn't make it to a toilet I would wet my pants. Sometimes, I'd have insensate urination, when I had no idea I had wet myself. I'd just suddenly find my trousers and my shoes were soaked.

I also had a spastic colon which meant I either couldn't open my bowels, which would put even more pressure on my bladder or, I would get about 30 seconds notice that it was about to happen involuntarily. If I didn't make it to a toilet, which I couldn't often manage because I moved so slowly, I would shit my pants.

What could I do? Isolate myself or shit myself in public? It happened about twice a month. I had never felt so hopeless. The sinkhole of depression that I was in seemed bottomless.

Then I met Sharon.

A RAFT ON THE OCEAN.

Sharon was a local girl. She was 19, very attractive and very strong in her intrinsic character. She fell in love with me and I fell very much in love with her. She knew nothing about the old me, before I was crippled - she was loving me for who I was.

Before she came into my life, I'd been wondering who could ever accept me: who would want to be with me when I couldn't walk properly, when I was shitting and pissing myself - when I only felt like half a man? The fact that she could love me as I was became a great turning point in terms of my self esteem and the reinstatement of my masculinity. She moved into my house and, by refusing to let me sit around feeling sorry for myself, she helped me regain a feeling of self-worth, of being a Man again.

She said: "Charles, I don't care what you do but I love you too much to let you sit there and do nothing with your life. You have to get up and do something. I don't care what it is, but you have to do something." So I started doing one thing, like gardening; and then another, like tinkering with the car or cleaning the kitchen. Action provided the first rungs on the ladder that freed me from my emotional pit. Sharon also taught me a lot about dealing with my anger.

Apart from the frustration of my new life, I was in constant pain because all the major muscles in my back were in spasm 24 hours a day. I was given pain killers but they had side-effects and even though they brought some temporary relief, the pain always returned, and worse than before. The muscle relaxants I tried were no better. They made me feel nauseous, yet I had to keep increasing the dose, and that relaxed the already weakened muscles in my legs so much I would fall even more.

In desperation I learned self-hypnosis, through which I was able to turn down the pain a little. But still, I wasn't aware of the rage I was trying to hold inside until Sharon pointed out to me how distressing she found the way I exploded over slightest incidents. My yelling and screaming helped me but made her incredibly fearful for hours. I knew I had to find some other way of dealing with the anger. Almost as soon as I came to that realization, another woman friend, a regular meditator, came around to see me and suggested that I should go to see a Swami near Sydney called Akanandana, who ran the Satyanada Ashram at Mangrove Mountain.

Sharon and I packed the car and left for Sydney the next day. We were driving out of Melbourne, through peak-hour traffic that was going at snail's pace when I found I desperately needed to pee - again. There were no service stations, no public toilets in sight, so I blew my top.

"Look Charles," Sharon said. "I know it's uncomfortable for you but I really don't want to hear about it and going on and on about it isn't going to help."

"Well," I screamed back, "I'd like to see how well you would cope with this!"

Her retort was gentle: "Not nearly as well as you Charles. But in truth, it's your problem." She was right. It was *my* problem.

I spent a week at the Ashram, talking with Akanandana, learning some yogic breathing exercises and interacting with the other residents. In such environments, people tend to be more open with each other than they are on the streets and a number of them pointed out to me that I had a tremendous amount of repressed anger. More and more I was getting the message that in spite of all my efforts I wasn't dealing with it at all well.

On my final day at the Ashram, I went for a walk with Akanandana and the last thing he said to me was: "Charles, you really have to put more joy back into your life." I knew what he said was true. I had no idea how to do it.

When Sharon and I got back home to Queenscliff we found ourselves deep in the full flush of early love. We were very sexually active and although my sexual pleasures had been compromised by the accident, which had left me, for some time at least, unable to ejaculate and with an abnormal penile sensation that bordered on pain, she got so much enjoyment out of our sex life that I was able, for the first time, to derive my own sexual pleasure from the joy of another..... Joy. There it was.

Six months passed in this domestic hiatus but as time went on, it became apparent to both of us that as good as it was, this was not going to be a long-term relationship.

Sharon was very kind but very young and I was 38. All the love in the world was not going to bridge the gap in our relative life experiences.

We parted knowing it was what we had to do. But knowing that didn't make it any less painful. But now I had meditation to help me deal with the loss. Alone in the house I was meditating seriously for an hour and a half a day and doing the breathing exercises Akanandana had given me. It was changing my energy structure and my outlook. The depression was definitely lifting. I was beginning to feel better about myself.

The old Charles had died. The grieving process for the loss of the man I had been had been protracted and difficult but I was beginning to recognise that there was a new person arising. A person who still had some value, who still had potential. The old tree had withered. A new shoot was growing and I knew I was ready to do something in the world again.

I started to look beyond what I used to do. I liked to teach and in a more positive mood came across an advertisement in the local newspaper seeking instructors for an improved reading course to be taught in the local provincial centre of Geelong. I was accepted for the training course.

The literature made sense to me in terms of neurolinguistic theory about how people read efficiently and why some read inefficiently. If we read efficiently, we read quickly and with high comprehension. It wasn't about speed reading, it was about improving reading strategies, a process most people don't reassess after about the age of eight when they are told to read to themselves.

Some lucky individuals, who have good mental integration, automatically move to a process called chunking, which means they take words in as chunks of information. Techniques to achieve this were among the processes I began to teach on a part-time basis. Ever the scientist, I couldn't help but notice that most people would at least double the speed of their reading, but there were others who didn't show much improvement at all. I made note of the differences.

I was recalled for the second neurological assessment and this time it went very well. My IQ had gone up about 15 points which indicated that the damage to my frontal lobe had either been repaired or that in the interim period, I had worked out efficient strategies to get around the damage. Maybe it was the meditation - whatever had happened in the year between assessments, my mental function had returned and my IQ was back up to 160. Now I had it in writing that I was fit to return to my job at the marine laboratory.

I found the door shut. My job had been reclassified and there was no longer a position there for me. I was pensioned off, effectively retired until the public service could find the first position that came up in my field. The catch was that my field was a limited specialty. My qualifications and experience did not make me the practical choice for most of the other jobs on offer. I sent of one application after another and became used to receiving very thin letters in reply, letters that started: "We regret to inform you"

So I continued on with the teaching, spending most of my class time with children in schools and local colleges. I would walk into the schools, still dragging my feet in a reasonably crippled way and still having to be careful because I could fall so easily. I had steel caps on my shoes to prevent wearing the tips off at a 45 degree angle. Even so, the steel would wear through every month. The kids accommodated me with good humor and as the meditation softened my inner self I came to accept that yes, I was crippled, but I was not without worth.

I decided to go even more deeply into meditation and went up to a country retreat centre to do a week-long course called Antar mona, or “awareness of silence” which required the participants not to talk for five days while they pursued a number of different meditation strategies. Deep in my own thoughts and witnessing my own experience of reality, I reached a new consensus. I really was OK.

On the sixth day, we could all speak to each other and one of the people I started talking to was Satyamurti, a woman in her early forties whose spiritual name meant “essence of truth”. We discovered an instant and mutual attraction. I was a lonely guy and it wasn't long before I took the chance to drop into her home whenever I came up to Melbourne. Very quickly it became an intense physical and spiritual relationship. I was spending as much time as I could spare from my teaching schedule in Melbourne and whenever she could, Satya and her three children would come to stay with me in Queenscliff.

My ardor was bridled to some degree when a chance to go back into my field presented itself with the offer of a temporary teaching position, replacing a professor of marine science at Deakin University, which was quite near to Queenscliff. During his six-month sabbatical, I became an adjunct professor, able to get back into doing what I knew and loved and back again in the questioning intellectual atmosphere of the university.

At the end of the six months, I moved up to Melbourne permanently, to be with Satya. Soon after I did so, I received a call from my brother, Don, in the States to say that my mother was dying of cancer. She was going to be operated on the next day and was given only a 50 per cent chance of surviving. Don told me there was no sense in my rushing home as we would know the result so soon.

My mother survived the operation but was given, at most, two months to live. I wanted to go home and be with her and I wanted to take Satya and the kids. I wanted my mother to know my new family, Jon, 19, Peta, 15, and Andrew, 13.

Before going home Satya and I made the decision to be married. The day after our wedding we flew to the US to spend our honeymoon with my family. Within days of my arrival, my mother was showing improvement. When I had arrived I had seen no life in her eyes. By the end of the first week the spark had returned. She lived for another two years.

Satya was a sensitive, intuitive person who was very interested in subjects that I had once considered wacko and, to be quite honest, still found quite bizarre. New-age pursuits like astrology, numerology, tarot and alternative healing therapies were among ideas I was more open to now, because they represented a chance that I might

still improve. I had made amazing progress but still wanted to be much better. I started visiting naturopaths, faith healers and massage therapists, even Chinese doctors and acupuncturists. Although not a lot changed in terms of my physical condition, but I was stimulated to keep looking.

One of the people I saw for the pain in my back was an acupuncturist named Rob Crickett, who had spent seven years as a monk in Buddhist monasteries in Asia. After our sessions, Rob and I would have a cup of tea and a conversation. On one occasion, quite out of the blue, he said to me, "Charles. One day you are going to be a very powerful healer." I wondered what on earth he was talking about. I was a scientist.

Another of the people who regularly dropped in was a guy called Hugh Simmons, who was into everything alternative. He would try every healer coming down the road and report back to us about all the new ones he had found. He romped into the house one morning announcing that he had found yet another new healing therapy. He had made an appointment for me to see the practitioner at 2 pm that day.

With nothing else on my agenda, I went along to see Dr Bruce Dewe, a medical doctor who had moved into an alternative acupressure therapy called kinesiology. I had a treatment with Dewe and two trainee kinesiologists that lasted for an hour and a half and they were doing the weirdest stuff I had ever seen.

I was lying on the table with one of my arms extended and these two student practitioners would push my arm, ask my body questions and twiddle different points on my anatomy, concentrating particularly on my throat. I was lying there thinking; "What on earth has this got to do with my legs and the pain in my back?"

Dewe appeared to be using a coherent system, yet in my knowledge of neurophysiology, it made absolutely no sense at all. Had nothing happened, I would have walked away thinking they were all very peculiar. At the conclusion of the treatment, Dewe told me to get up off the table and walk.

When I first stood up I could hardly balance. I certainly couldn't walk. So much change had occurred in my neurology that I couldn't walk for about 15 minutes. Then, suddenly, I was walking in a totally new way. Instead of arching my hips and dragging my feet, I was walking with my feet aligned under my hips.

It was a massive functional change. Something profound had happened. I was walking in a much more efficient way than I had been able to in the more than two years that had passed since the accident. Dewe was working from a model that said something could change. And it had. My model said that what had happened was impossible. But it had happened.

I walked away exhilarated but incredibly perplexed. Suddenly my model of how the body worked was incomplete. It was no longer valid. It couldn't explain what had happened to me.

Dewe's model, which was based on an energetic system, had worked. But how had it worked? How had the pushing of particular points on my body caused such amazing change in such a short time?

TERRA FIRMA.

The treatment had taken place on a Wednesday. Two days later, I was a participant in a class Dewe was leading called "One Brain Kinesiology." I was that desperate to find out what had happened to me.

The method Dewe taught purported to deal with emotional stress issues as well as dyslexia and other learning problems. At the workshops we learned various methods of assessing the different problems that can interfere in the learning process, and I watched with great interest as other people went through similar profound changes of function that had occurred within me.

There was one man of about 50 who had problems with reading. When he read out loud, he would read slowly, faltering painfully over every word. Dewe ran him through a stress diffusion technique called age recession which allowed this man to go back through events that had happened in his early life.

Using muscle monitoring, Dewe could locate particular stresses and he found this man had a major issue that related to an event which had occurred when he was six. At that time, he was a school beginner and because his family was relatively poor, he always wore hand-me-down clothing. The first time he was asked to get up and read to the class he happened to be wearing a pair of shoes that had belonged to an older brother. The shoes were big and sloppy and as he clomped to the front of the room the class started laughing at him. From that day, he had been overcome by anxiety whenever he had been asked to read out loud.

After applying an acupuncture technique specifically to diffuse this long-held stress, Dewe had the man read in front of the kinesiology class again. He read fluently. Tears streamed down his face. For the first time in his life, he was able to read out loud without stumbling and without being terrified.

This change had taken place before my eyes. He was amazed and so was I. I could see that the techniques worked. But how? How did they work? No one in the class could explain how such a complex function like reading could be changed with such apparent ease and speed. How had Dewe, who had never met this man before, been able to access such intimate information about a specific emotional block just by pushing on the man's arm? How had this man gone from being a manifestly poor reader to an excellent reader in the space of about 10 minutes?

In that weekend workshop, I learned some rudimentary muscle monitoring techniques, which allowed me to effect changes for some of my classmates. One of the techniques was very simple. It involved drawing a big X on a piece of paper and holding it in front of a subject while testing a muscle in their arm for its ability to lock when manual pressure was applied.

We learned that if the person being tested had good visual integration, the arm muscle would hold strong and firm. If they didn't, the muscle would give and the arm could easily be pushed down.

We used the same technique to test subjects while they were looking at two parallel lines. Generally, the theory said, people who tested strong on the X's would be weak on the parallel lines and visa versa. This was an observable way of testing visual integration which is so essential for reading.

I tried it with a few people and found if I asked someone who was strong on the X's if they had difficulty reading, they would say "No".

Do you comprehend well? "Yes."

Do you get tired when you read? "No."

But when I asked people who tested weak on the X's, Do you have difficulty reading? They would say "Yes."

Do you comprehend well? "No". Do you get tired reading? "Yes."

I had the perfect opportunity to test the hypothesis in a broader sphere. I had classes full of people who were attempting to read more efficiently. So for a lark, during class breaks, I would test a few volunteers using the X and the parallel lines.

The correlations proved to be so sound that quite soon, before almost every new class, I would test people and be able to predict who would improve and who would not. Those who tested strong on X's could be predicted to improve their reading speed and efficiency. Those who tested weak on X's could almost never improve.

At the end of the courses, the hypothesis was generally proven. I never once found a student who tested strong on X's who did not improve significantly. Over ninety percent of those who tested weak, showed no improvement. A small percentage of this latter group would improve to some degree through the application of sheer will. If you have enough willpower you can overcome virtually any disability and some of the students with poor integration did indeed manage to improve their reading proficiency.

At first I reasoned that because I was working mainly with school students, they might have had varying degrees of motivation. Some were trying hard, others were not. But as I was also teaching lawyers and telecommunications executives, I had access to another group who, by definition, were highly motivated. They were paying big money and taking time out of their busy schedules. With the professional group, the hypothesis didn't change. Those weak on X's still didn't improve significantly in spite of the fact that I could observe they were trying very hard.

To my mind, these results gave great validity to the techniques that kinesiology was presenting. It was predictable and reproducible and the tests supported the hypothesis. The outcomes had scientific validity. Inspired, I began to take every kinesiology workshop I could find.

In 1985, kinesiology was just being introduced into Australia so along with many other early practitioners I did more of the One Brain series and various courses in Educational Kinesiology, which dealt more directly with learning problems. But through all of these courses I remained constantly frustrated because there was no explanation that I could really get my teeth into. No model that had any real substance for me.

Kinesiology students who were very intuitive, could feel and see the results and so could I. But whereas they weren't too concerned with finding out why, coming from a more logical bias, I desperately wanted to know why it happened. I had to find out how this stuff worked.

In kinesiology you are pushing on a physical arm that is neurologically connected to the nervous system and the reason the arm muscle locks and stays locked, or gives and is weak, is because of something that occurs at a neurological level.

But, I had observed mental events - such as just thinking of a stressful issue - to also cause this response. Could the mind also affect what was happening neurologically? If it could, this meant the muscle could indicate both neurological and mental events with equal clarity. Somehow I was beginning to sense that the mind must interface with the physical body in some real, yet indeterminable way.

It was at this junction of awe and frustration that I met Richard Utt, an American who was the founder of a powerful form of kinesiology. Utt came to Australia to teach the course he had developed called Applied Physiology. I took the first workshop in the series, called Advanced Muscle Testing, and for the first time, I was being offered an explanation that I understood. Utt was able to talk about neurological pathways that I knew to exist and he hypothesised their role in muscle testing.

In muscle testing, when you ask someone to hold their arm out, and apply pressure to push it down, there are sensors in the muscle that send messages to the central nervous system. In a sense these messages say "I am being pushed down."

Now the brain had asked the arm to resist the pressure. Automatically, the incoming message of pressure activates an outflow of messages that say "Equal the pressure. Contract harder! Do what the brain asks!" If there is no interference in this conversation between the muscle sensors and the central nervous system, the arm will easily do as it is asked and resist the pressure. In kinesiology it is said that the muscle locked or remained strong.

If, on the other hand, something interferes with this conversation between the muscle and the brain it is as if you are having a conversation and someone interjects and talks over you. Because of this interference, you may miss information and because you didn't hear the instructions, you will not be able to perform the task requested. Where such interference occurs in the neurological flow that maintains coherent muscle function, the arm may give, or in kinesiology terminology, unlock or be weak. With kinesiology or muscle monitoring, what you are really looking at is the

ability to monitor biofeedback in the truest sense of the word. Biofeedback is feedback from a biological system that is used to guide that system.

What Richard Utt had perceived was that a muscle circuit is like an electrical circuit. From the feedback of the muscle sensors, the central nervous system, which is the central processing unit, then acts upon that information to guide the next response.

When a pilot is flying a plane he is, in effect, the central processing unit. He is making the decisions but to do so he needs feedback from the plane's sensors and instruments. The sensor indicates that the plane is tipping to the left. The pilot receives this feedback from the dial in front of him and, based on this feedback, he then guides the plane back to horizontal. This is a classic feedback situation: information in; assessment; then, action in response to that information to restore balance. As with aircraft, so it is with human bodies.

I then found out that Utt's background was indeed in feedback systems. He was a computer expert who had specialised in aircraft guidance systems, which he hypothesised were analogous to the wiring of the human body. One of his great fortunes in life was that when he first entered kinesiology, he had no anatomical or physiological understanding, but had clocked up many years of training in analyzing feedback circuits. Like many other great discoverers or inventors, he came to the field of kinesiology with no preconceived ideas of how things worked. He was free to look at the connections within the human body from an entirely new standpoint.

What he presented to me was a cohesive model of the nature of neurological circuits. A muscle does not operate in isolation. Every muscle in the body is wired not only to itself, in a feedback loop, but also to those muscles that cooperate with it to perform a task. These helper muscles are called synergists because they assist the main muscle or prime mover, perform its action. There is more to it. Because muscles can only pull, every muscle is arranged with another muscle that opposes its action or, can pull the bone in the opposite direction. For instance, the biceps muscles lift the lower arm up. Its antagonist, the triceps muscle, pulls the arm down.

For integrated muscle function it is clear that these two muscles must be synchronised in their action. If I ask my biceps to contract and simultaneously, my triceps contract, clearly my arm cannot move. In fact if you tighten both your triceps and biceps at the same time your lower arm cannot move at all. If you want to raise your hand to scratch your nose, you tell your biceps to contract. The sensors in the biceps automatically tell the triceps to relax to exactly the degree to which the biceps are being contracted. It is an incredible arrangement, which allows a single command from the brain telling only one muscle to perform an action, which then automatically synchronises all the other muscles involved in that action.

And here I was, this research scientist, sitting in a classroom enthralled by the explanation of this fantastic thing called kinesiology which was being given by a former computer expert, who like me, had survived a life threatening circumstance and whose recovery had similarly been facilitated by this pioneering science.

After kinesiology had saved Richard Utt's life he, like me, became obsessed with trying to understand how it had happened. He knew that meant learning about

anatomy and physiology so over the next few years he read extensively and his reading encompassed an in-depth investigation of eastern energetic sciences. He made a mental connection: between the nature of the energetic systems on which eastern medicine is based, and his understanding of electricity - the flow of energy that we recognise in the West. Immediately, his computer knowledge had a new application.

Using his knowledge of electrical feedback systems to understand the muscular systems he saw in the anatomy and physiology textbooks, Utt realised that there must also be a connection between the energy flows of the East, which apparently controlled the physiology of the body, and the physiology of the body as it was seen in the West. He then sought this interface and found it in the acupuncture meridian system of Chinese medicine.

In the Chinese system, “dis-ease” and physiological dysfunction are seen to be nothing but blocked energy flow. When energy flow is harmonious there is physiological balance. When energy flow is distorted by a block or some kind of interference somewhere in the energy circuit, there is disharmony, which is reflected in disturbed physiology. These interferences or blocks do not show up under x-rays or other physical examination. The Chinese had recognised that we are more than a physical being. We are, in their terms Body-Mind-Spirit - one integrated unit. In their model an emotion or a negative thought could be as powerful a block to energy flow as a physical problem. Emotions of course, cannot be seen, touched or x-rayed.

Finally, I had an explanation for the observations I had made of a muscle going weak because of a mere thought or by someone remembering an emotional issue. Utt provided many dynamic illustrations of how some sort of energetic, or as he termed it electromagnetic resistance, had caused a failure in the system, and how, when that resistance was released there was a return to function.

Having found Utt so inspiring as a teacher I took every course he taught in Australia over the next two years. The other thing Utt did for me, and something that really convinced me of the effectiveness of kinesiology, was a treatment for my chronic back pain, pain that was a constant background of distraction. In just two hours, by the application of acupressure and Applied Physiology techniques, he eliminated 80 per cent of this pain and it has been gone to this day.

I was still teaching the reading course, when I finally landed a permanent science job running the analytical chemical laboratory for the Victorian Government's Environment Protection Authority. I was still taking kinesiology workshops on the weekends and as I was beginning to attract a few clients who wanted me to work on them as a kinesiologist, I was fitting a few treatments into my evenings and free weekends.

It was becoming a 90-hour a week schedule, which was starting to affect my marriage. In fact I was being torn three ways: to Satya, to science (my past) and kinesiology (my future).

The man who employed me for the reading courses was fascinated by the results I was achieving and asked one day whether I would explain my methodology to him and a couple of invited visitors, one of them a clinical psychologist. I made a

presentation of my work to this group and at the conclusion, the clinical psychologist said that although she didn't fully understand what I was doing, she was keen to challenge me by sending along some of her more difficult clients, young children with significant learning problems who were showing no progress at all with traditional remediation.

I worked on several of her clients and when she reviewed them she congratulated me on how manifestly they had changed. Their school performance, self-confidence and self-esteem had risen so markedly she asked whether she could send more children along to see me. Throughout 1987 she sent more clients to me and the results were gratifying for all of us.

In the other area of my life, however, the stresses and strains from needs that couldn't be met or satisfied were causing the relationship to buckle after only three years. Neither Satya or I felt we were growing. Neither of us was really happy. I was facing another relationship that had to be ended. I desperately wanted to begin teaching kinesiology but Satya was against it. The frustration was enormous and mutual. We stuck it out for the sake of the children for as long as we could.

During this time my friend Rob Cricket, the former monk, said to me, "It is so difficult to watch you going through this Charles because it is like watching a B-52 only gliding. You have all this tremendous power and you are only gliding - you are going down."

I had been so desperately trying to rein in my instincts to move forward that I had progressively been turning myself off rather than confront the issues in the relationship. In the context of that relationship I couldn't turn my power back on. After Rob made me realise what I was doing to myself, I knew I had to go.

Another ending. Another beginning.

As soon as I left, I immediately started to teach kinesiology and really enjoyed it. I also perused more of Richard Utt's work in the courses he came out to teach because I was learning something new every time.

Utt decided that because his program was so content-rich, and required such intense study in anatomy and physiology, it was impractical to do it on flying visits. He would start a new five-month program at his institute, the International Institute of Applied Physiology, to begin in 1988 in Tucson Arizona.

I had left my wife. We had decided on a property settlement which meant I was selling my house and would have money in the bank. I had paid off my car and had decided that my former career in mainstream science was now over for me. I resigned from the Environment Protection Authority and all the signs were pointing me towards America. I had found my path with heart, the path that Carlos Castaneda had described in the *Teachings of Don Juan* as the choice that makes the distinction between the ordinary man and the warrior.

I really felt a calling to work in healing and to pursue the new path of working with people with emotional, physical and learning problems. I had seen such

tremendous change in myself and in so many other people that I wanted to be able to do it for more people. I wanted to help people to succeed in their lives. I went to Tucson and did the course and then stayed on for another six months working with Utt doing research. I came to regard him as a creative genius when it comes to working with energy and using acupressure in a new way. I was able to synthesize many of his methods into those I was already using.

At last too, I was beginning to piece together a model of what had happened to me that day I went to see Dr Bruce Dewe and encountered kinesiology for the first time. What I couldn't understand then, was how dysfunctional neurology, which in the western terms indicates damaged nerves, could so quickly be undone by stimulating a few acupoints?

When there is nerve dysfunction, it can be based on two factors, only one of which is currently recognised in the West. This factor is overt nerve damage. From this point of view, if you are instructed to move a muscle that has been shown by electrical stimulation to work, and you cannot move it, the usual prognosis is: "the nerve must be cut or damaged beyond repair." This is analogous to entering a room, turning on the light switch and finding that the light does not go on, and immediately concluding that "the wires have been cut." Most thinking people would not leap to this conclusion - "the wires have been cut" but more sensibly would conclude (assuming they knew the bulb was okay) that "the circuit breaker has switched off." All modern circuit breakers switch off the instant there is too much current in the circuit, and then, as the circuit-breaker cools, they should automatically switch back on again.

What appears to have happened in my case and in many other cases of paralysis that both Richard and I have worked on, was that the muscles didn't work because a circuit breaker had switched off in my nervous system. The result was that nerves running to certain muscles had stopped conducting neurological flow and hence appeared to be "cut" or "damaged".

On closer examination, the circuit breakers of the nervous system do not appear to be in the physical body, rather, they are located in the energetic body. When the energetic circuit breaker switches off, the nerves remain intact but do not conduct impulses. This is similar to the modern circuit breaker above, that switches off to prevent damage but then gets stuck in the "off" position. The appropriate acupressure treatment appears to miraculously "switch on" this energetic circuit breaker returning neurological flow and thus function, to the nerve. This is how some of my muscles had remained effectively paralysed for years and then following only minutes of treatment had been turned on again. It wasn't a miracle, but was merely an energetic reality.

From these observations we might conclude that neurons are more "intelligent" than had been presumed. Their first response to hypoxia, as in my case, or traumatic damage, is not to die but to switch off or to go on stand-by until the energetic system is reactivated. This could explain many miraculous cases in which people have recovered from serious neurological injuries, including brain damage to regain full function.

I feel very humbled to be able to count myself among this number.

I returned to Australia at the end of 1988 and decided to establish a business working out of a room in a suburban doctor's surgery with the steady stream of clients the psychologist continued to send to me - mostly children with learning problems.

I often found myself musing about why I was focusing so much of my time and energy on children with learning problems. The answer was simple and circumstantial. Since my accident when I had found myself so often unable to succeed, even with my best effort, I had developed a new level of compassion and understanding of what it was like to fail... to lose and to constantly feel less able than others.

I knew exactly what that felt like. I knew what it did to my self-esteem and I could see what it was doing to these children. With what I had recently discovered I also knew that I could help them.

The new techniques meant that I was getting even better results, so I was rapidly getting many more clients than I could possibly deal with. I was booked up months in advance. I needed a partner.

The person I figured I would feel most comfortable working with was a Melbourne-based woman, Susan McCrossin, who had been on the course in America with me. She had originally come to me as a client and had become so excited about what kinesiology could achieve that she wound up her career in computer software and gave away a six-figure income to pursue her own path with heart, learning about and applying the techniques of kinesiology and applied physiology. She struck me as a very independent person, the type of woman I now knew would work best with me.

The two marriages and the relationship with Sharon had all failed and I had been forced to review why my partnerships with women had been so problematic - so costly, in an emotional sense, to all of us. When I really got honest with myself I had to admit that my need to be needed was so overpowering that I was consistently attracted to needy women. The relationships would work for a short time but eventually, one, or both of us would become exhausted by needs that could never be fulfilled. Finally, I became conscious that I was creating the need situation and the reason for the failure. I resolved that I wanted to become self-sufficient and look for someone who was equally independent. Then maybe a relationship could be interdependent and mutually supportive. Right then however, I wasn't actively looking for anyone.

Sue was more than happy to come into the business because she said she had enormous respect for me. From then on we worked together and started to develop our own program of procedures which we called the Learning Enhancement Acupressure Program, or LEAP. While we were getting great results for most clients there were always some who eluded our methods. To understand why we needed to undertake some intensive research into brain function and to look at it from the perspective of our kinesiological and applied physiological models. That work constitutes the second part of this book.

Suffice it to say that we had been working with each other for some time before we began looking up from our notes to realise our friendship and working partnership was blossoming into something more meaningful. We found ourselves in a much more romantic frame. We dated after work and by 1989 began living together as a couple.

We have now been married eight years. I also have a dog in my life again, a gentle, soulful friend called Darius.

My journey to find my path with heart, my purpose and my life's partner had consumed almost a decade. It had begun with a near-fatal accident that could have taken me out of mainstream life, yet looking back, I realised the day I took the dive beneath Skull Rock was the day I passed through a portal into a life that was far more meaningful and enriching than anything I could ever have dreamed of had I remained an able-bodied research scientist.

I still limp but I have found spiritual, emotional and professional dimensions of myself that I can share with the world. Susan and I truly believe that we have found an application to a new science that can change people's futures. And when you can change the future for one person, as the master's promise, you can effectively change the world.

I no longer see what happened beneath Skull Rock as an accident. It was an event that redirected my life and put me in touch with my soul. My path has changed from that of a seeker of scientific truth to an emissary of truth in healing.