

# News Review

## Prof. Bruno Källebring

For our profession and research career we are now living in Gothenburg, which is the second largest city in Sweden. Göta älv or Gothia river is flowing through the heart of this beautiful city. Gothenburg is situated on the west coast of southern Sweden, with lots of small island surrounding it, which increase its natural beauty and activity. Gothenburg also has a strong cultural and scientific background. Two universities, many companies like SKF, Volvo, Ericsson build its major economy. Getting opportunity to work one of these Universities we met an wonderful personality named Bruno Källebring, whose life story inspire us to write this article. We are going to tell you two stories of similar kind but the endings are completely different ways at opposite sides of the World.



Beautiful Gothenburg Port

Sudipto was born in a lower middle class family in West Bengal. He was growing up in a small beautiful village with lots of greenery around, fruit trees like mango, guava, black berry, tamarind etc. With lot of activities in village life, he found a great fun and interest in tree climbing from his early childhood, it also came to him very naturally. He could easily able to manage the heights or uncertainty of tree's stability just like a squirrel without any fear. His fearless attitude was a big reason of fear and anxiety for his family members. He was very popular and had a very good reputation

in his village and school. He always took active part in any kind of social work in his village. It was hard to defeat his school team if he participates in school's football and cricket team. In one word he had a bright, prosperous future life that was promising for his family. Suddenly in an afternoon everything was stopped, when he was climbing in a blackberry tree. Just after the start of his climb, not even at very high, his hand slipped from a branch and he fell down from about 5ft height. With no cut mark, no bleeding, no pain on his leg, hand or head, he only felt a severe pain on his back which later on revealed that Sudipto's spinal cord had been broken. He survived but could not able to stand any more. May be a proper treatment could give him a good life back but neither his family had enough money, nor we had a good social infrastructure to help him. Though we know the success like Sudha Chandran or Masudur Rahman Baidya, but Sudipto's permanent address became his bed from that day onward. He just got lost from rest of the World and continuous lying down on the bed, gradually pushed him towards the end of his life.

Prof. Bruno Källebring, with whom we met at Gothenburg University, whose personality, ambition and passion really inspiring to all of us. We don't know how, but our friendship grew very fast and very often we spend good time to talk with him about life, society, science etc.

Bruno was born and brought up in a small village in Sweden. From his early age he dreamed of being a mountain engineer. Driving was also a passion from his early childhood. He started "go-cart" racing at the age of 8 and at the age of 14 he got the license to take part in professional "go-cart" racing. Unfortunately, Bruno faced a severe accident during training when he was just 16 in 1974. In that accident his spinal cord was broken.

After spending twelve months in hospital he was able to get back to life but the wheelchair had become his lifelong companion. He lost total sense of his body from just below of his shoulders including both of his

hands. It was quite natural that everybody surrounding him were very much upset, but Bruno did not give up hope at all. He started to think about life in a different way. He realized that becoming a mountain engineer would be very difficult in this situation and he decided to study physics. But first he went to a rehabilitation center to get a proper training to cope all day living. After finishing the training at the rehabilitation center, almost three years later, he eventually took his Bachelor and Master of Science degree in physics at Chalmers University of Technology, Gothenburg, Sweden. After that he completed his PhD from the Gothenburg University in Biophysics and then went to California Institute of Technology for his post-doctoral work. After spending two years at CalTech, California, he returned to Gothenburg and joined as a project assistant at Gothenburg University. Later on he got a permanent position at the same university in the Department of Biochemistry and Biophysics in the late nineties. Still he is working at the same place and additionally he is in charge of the departmental computation facility. This is Bruno's scientific career after returning from the door of death. But what about his passion for driving and car racing?

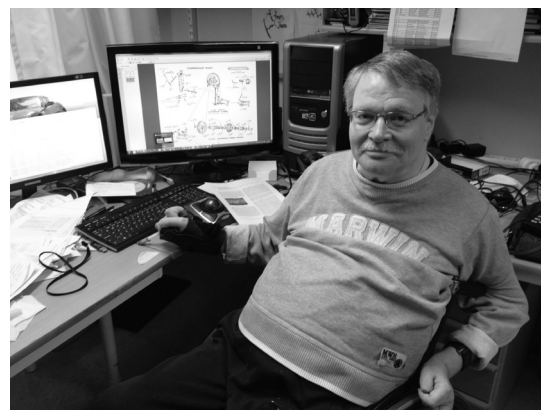
Once we asked him "when did you start driving again after your accident?" In his own words: I did not start it again, I never stopped driving. It was my first aim to recollect my drivers license and I got it during the rehabilitation period."

Every year he drives car to different races anywhere in Europe and enjoys the racing very much, even he is planning to go to India to participate in "Formula one" race. He has a specially adapted car which has all controls hand maneuvered most of them placed at the door. As a person, he is very quiet, calm, sincere and wise. His humbleness reveals in his words "I had some luck also, I got good people around me."

Bruno cannot get up alone from his wheelchair at all, his two legs are completely paralyzed. His arms and shoulders are somewhat moveable. Somebody has to put the coffee cup or the sandwich on his hand just before his mouth, then only he can eat it. Once he burnt his hand severely when he held a newly fried spring roll in his hand and the hot oil leaked through the supposedly insulating wrap and burnt his hand. Since he does not have any sense in his hands he could not realize it at all until he saw the blisters. He has a special type of

mouse and a special stick with which he operates the computers and does the total work independently.

How can these unbelievable things be possible? We know that without his will power, his mental strength it would not be possible. But we really can not ignore the help of infrastructure in Sweden. In his everyday life Bruno likes to visit offices, supermarkets, public transport, hospitals, amazing places etc. and every place is made easily accessible and comfortable for wheelchairs. Very often, Bruno expresses his gratitude to rehabilitation centers. He often tells, these centers are really helpful and a must to get back to some sort of normal life after such a bad happening. He still visits such a center once a year to keep his strength.



We feel really lucky having an opportunity to get close to such an inspiring and nice personality. But sometimes this really makes us worried about the fate of disable persons in our country. The infrastructure scenario is not only available in Sweden, this is an example, the same facility is available almost all over the Europe. Very often one can notice in every sort of public places like markets, trains, public transports, offices, universities, people with wheel chairs doing their regular jobs independently, happily, even they participate in marathon races.

Looking at those people sometimes we think about Sudipto. Is it really impossible to make our social infrastructure friendlier for them so that most of the people like Sudipto can live their life independently in our country and their family can smile? Our answer is not at all, atleast to some extent. We have laws, justice everything for disable persons in India, but due to lack of awareness neither the disable persons can take advantages of those facilities nor society can help

them to take advantage of these. This is not only their loss, society also loosing their potentiality. Because, in general, disability of some part of body normally strengthen the rest part. Let we all take the initiative to make atleast our own locality a wheel chair friendly area so that most of these people can smile like Bruno", and India will become a place where people with disabilities will be on the same platform as the non-disabled, all we smile together.

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## **A Unique Medicine Laboratory for Astronauts**

A unique medicine laboratory for astronauts' has been commissioned by the German Centre for Air and Space travel (DLR) in the third week of July 2013 in Cologne. The experimental body fastens in the centrifuge with six fold gravitational force and has endured the acceleration as the starting of a racket. In the sustained immediate vicinity of pressure chamber it has set up conditions as if it climbs up to the highest peak of the Himalayas. And in psychology laboratory as against it must under the stress, accomplish the mission in order to dock in exactly at the international space station – a simulated shuttle.

So manifold also are the tasks, they serve all together the goal to investigate the health and performance capacity of the astronauts at the task. In the Envilab which was opened in the 3<sup>rd</sup> week of July 2013 in the German centre for air and space travel in Cologne, the researchers can control in future how the extreme conditions in case with a flight to Mars act upon the human beings and develop the possible counter measures.

We will carry on research for the astronauts and for the future of space journey. But we want also to concentrate the fixed goals on the connection to the perishable medicine – clarifies Rupert Gerzer, the manager of DLR Institute for Air Space Journey medicines. Thus supports the ability of the astronauts, also helps the pa-

tients on board.

In the centre of 3500 sq. meter big research hall the shorthand human – centrifuge rotates and generates an artificial force of gravity for the experimental persons. In course of astronauts' swimming in space their joints and muscles disintegrate. Without gravity the performing ability of rotation reduces and the immune system weakens. The gravity under a centrifuged journey could counteract. In which sphere that could function, we want to find out of the centrifuge with the students – clarified Jochem-Zange, Manager of the working group integrative muscle physiology.

Under the artificial force of gravity the experimental persons can accomplish further tasks: can kick a training wheel or can make practice on a springing slab which can still strengthen the function of centrifuge travel. Instantly several cameras also observe the movement cessations.

There is worldwide only once the possibility to regulate one ultrasound apparatus on the experimenter and to observe his heart with a robotic arm during the travel.

The goal of the researchers of Cologne is to bring standard made centrifuge for the training of astronauts in cosmos. The counter measures so developed could indeed work against the joints and muscle disintegration