

CARLOS CHAGAS FILHO: SCIENTIST AND HUMANIST

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After receiving a degree in medicine from the University of Turin in 1936, I attended the Institute of Anatomy and the clinic of neuro-psychiatry because I was attracted both by pure research and by the practice of the medical profession for which I felt I had special aptitudes. My uncertainty as to which career to choose was ended by the issuing of the racial proclamation of 14 July 1938 which deprived all non-Aryan citizens of the right to a university career and to pursue all the open professions. In the spring of 1939 I accepted the invitation of a neurological institute in Brussels and I moved to that city, where I stayed until December of the same year when the invasion of Belgium by German troops was considered imminent. Given that I did not want to be separated from my family I returned to Turin. Unable to attend the university institutes I decided to set up a small laboratory of experimental neuro-embryology in the bedroom of my home.

Giuseppe Levi, who like me had also returned from Belgium, to which he had emigrated at the beginning of the anti-Semitic campaign, asked if he could come and work with me and with joy I offered him the post of my first and sole assistant. These were the months before Italy entered the war at the side of Germany and when the daily newspapers were vomiting forth anti-Semitic slogans. The Fascist Children's Organisation and the Fascist Youth paraded in the streets of the city singing: 'If we need a bit of land we'll take England, if we like salmon we'll take Japan, then we'll have a ring-a-ring-a-roses, and we'll take the whole world'. This glorification of the omnipotence of Fascist Italy alternated with the declaration of hate and contempt for the members of the vile Jewish race who had to be exterminated so that they would not contaminate the members of the pure Aryan race. To the articles and the writing on the walls were added the posters which were put up all over the city. On 16 October my brother Gino, who

was already a famous architect despite his young age, came home proud of the honour which had been bestowed on him: "They've put me together with Einstein", he told us. In a poster, written down by Emanuele Arton in his diary, Gino's name appeared immediately above that of Einstein and other personalities held to be of 'Jewish race': 'They are Jews: from Verona, Moravia,... Levi-Montalcini, Einstein, Blum, La Pasionaria, Roosevelt... All the heads of the Freemasonry are Jews and all the abettors of the stock exchange. The most despicable cowards are Jews, as are those who make the people go hungry, the most unrepentant denigrators, the most perverse defeatists, the exploiters of men and women. The homosexuals are Jews, as are those who have never sweated, never worked, those who have always betrayed the homeland, those who wanted the sanctions. So do we want to finish all this once and for all? Not in the concentration camps but with flame-throwers against the walls. Long live the Duce! Long live Hitler! PS. We will also settle accounts with the accomplices of the Jews, the so-called honorary Jews.'

In an atmosphere which every day grew darker and more threatening, Levi and I work very hard in my minuscule laboratory intent on studying, from morning until night, the effects of ablation and the grafting of limbs on the development of the nervous systems of chicken embryos. The results of these studies were not accepted for publication by the Italian scientific journals because of the race laws and this was a stroke of fortune because it meant that they did not fall into oblivion. They were instead published by a famous Belgian scientific journal and by the Vatican scientific journal.

In 1943 the fall of Fascism and the declaration of the armistice by General Badoglio opened the doors to the Nazi hordes and there began the ferocious hunt, deportation and mass extermination of the small Jewish population which had been in Italy for many centuries. With my family I found refuge in Florence – the city was full of evacuees from the North and the South and it was not difficult to get lost amongst the other refugees by adopting a different name. Giuseppe Levi had also sought refuge in the same city. He arrived one day unexpectedly from the North and declared to our landlady that he was totally unaware of our real identity. He did this with his voice which had made legions of students tremble and introduced himself in the following way: 'Prof. Giuseppe Levi, Oh no, Prof. Giuseppe Lovisato. Call Rita for me'. He had the foresight, which was not to be expected in such a person who held every rule of safety in contempt, to call me by my name, given that he did not exactly remember what surname he had bestowed upon me. From that day onwards, however, our landlady had

some suspicions about our real identity and that of our many friends who came to visit us and declared that they were refugees from the South despite their unmistakable Piedmontese accents.

The winter and spring of 1944 went by with strong contacts with our friends who were partisans and active in the Partito d'Azione ('Party of Action'). We made false identity cards for those who had no papers and engaged in the revision, together with Levi, of his monumental work on histology. In the Party of Action, which had been founded by Carlo Rosselli, anti-Fascist intellectuals such as Ferruccio Parri, who played a role of primary importance in the activity of the Resistance, as well as other personalities (Bruno Zevi and Aldo Garosci, Riccardo Bauer etc.), were active members. Because of internal disputes, as described in the excellent volume 'L'orologio' ('The Watch') by Carlo Levi, the Party of Action broke up in 1947. Its prestigious president, Ferruccio Parri, joined the Republican Party at the side of Ugo La Malfa, and others joined the Socialist Party led by Nenni. The political field was characterised by mass parties whose broad organisational structures meant that they became the chief actors on the stage of national politics. The Communist Party was led by Palmiro Togliatti. The Right, hostile to the emerging new organisation of the country, which included Monarchist groups and those who looked back with nostalgia to the previous Fascist regime, established the Italian Social Movement which was led by Giorgio Almirante.

The liberation of Florence in August of that year marked the end of a long nightmare. Equipped with a real identity card I presented myself at the Anglo-American general headquarters and was employed as a medical doctor for the large number of people who had been evacuated from the Apennine regions of the Gothic line where the war was still very much in progress. This was my last and most painful experience as a medical doctor – the refugees arrived exhausted in army lorries which by day and night brought their human load to the barracks which had been turned into a lazaret. It was here that I was stationed.

In 1945 I actively took part in the campaign in favour of recognising the right of women to the vote.

With the end of the war in April 1945, Giuseppe Levi was given back his chair of anatomy in Turin and offered me the position of assistant. I held this position until 1946 when the famous scientist Viktor Hamburger, who had read my article which had been published in the *Archivie de Biologie*, invited me to go to St. Louis and join the Department of Zoology, of which he was the director, at the University of Washington. He wanted a clarifi-

cation of our different points of view on the mechanisms of action of the periphery tissues on the nervous centres used for their innervation. I left for the United States of America in September 1947. The invitation was for a few months and although I had intended not to stay there for long I remained in the Department for three decades, indeed until 1977.

In 1961 I wanted to meet my family relatives again and so I decided to go back at least for a few months to Italy, continuing at the same time with my scientific and teaching activity at Washington University. The choice of the city where I would continue my research on NGF fell on Rome thanks to the generous hospitality which was offered to me by the late Prof. Giovanni Battista Marini Bettòlo, the Director of the Department of Biochemistry at the Advanced Institute of Health.

Thus it was that I went back to that city which had exercised a great charm on me ever since the far off days of my childhood, when for the first time I was so struck by the Coliseum, by the Forum, and by the ruins of great imperial Rome.

On arriving in Rome I found the eternal city as I remembered it in those distant years. The vile traces of the invasion of the Nazi hordes had disappeared and there only remained the memory of their impiety in the short phrases written in blood in the walls of a sad building in Via Rasso and the horrors of the lugubrious Ardeatine mass graves. Having overcome the tragic and ignominious period of Nazi-Fascist domination, Rome had gone back to what it had always been, shining with light and pervaded by that natural Romanesque sense of humour immortalised by Gioacchino Belli and Trilussa. Rome in the 1960s was also animated by a feverish zeal of recovery in all sectors, ranging from the industrial to the cultural. This latter sector, fortunately and miraculously, had not been destroyed by the storm which had fallen on the city, invaded as it was by barbarians. The formidable energy and creativity of a small group of young scientists known to history as the 'boys of Via Panisperna' had kept this flame as alive and burning as it have ever been. During the centuries of the triumphs of the Roman empire and the centuries of the Renaissance, Rome had asserted itself for its extraordinary contributions to Western civilisation, these 'boys' were now to open up a new era with the discovery of nuclear fission, and this in a city which was besieged and hungry.

In 1969 the group that I directed moved from the Advanced Institute of Health to a location belonging to the National Research Council. In this Centre young researchers gathered around me. They were fascinated by the research of nerve growth factor which was then in top gear and were driven

by enthusiasm and the spirit of adventure which reigned in the laboratory, unconcerned by the fact that I could not guarantee them any certain future.

During the first part of the 1970s I took part in the activity of the women's liberation movement to support the liberalisation of abortion. The movement was led in Rome by the late Simonetta Tosi, who was then a young researcher who formed a part of the group of experimental biology which I directed. Simonetta campaigned very strongly in favour of the defence of the health of women and of the right, in cases of need, to engage in the interruption of a pregnancy. Her activity was marked by a courageous opposition to both institutional realities and groups who were hostile to any change.

During the last decades of the twentieth century in our country and in other highly industrialised countries a slow and gradual increase in the presence of women took place, not only in the social sphere but also in political and scientific sectors. In an article published in the volume 'The Road to Liberation' I wrote: 'Two X chromosomes have for millennia determined the destiny of hundreds of millions of women, in a way that is totally independent of their natural talents and inclinations. But the gates which blocked the road to liberation are today thrown open. This writer who in her youth found them bolted today with joy observes the long line of young women who proceed in great numbers along this road which was so rigidly closed to them in the past'.

In addition to scientific activity, which I am still engaged in, I dedicate the time available to me to social ethical questions and issues which today, at the dawn of the third millennium, I believe is of primary importance as much as ever before to address ourselves to.

In May 1999 at the time of the *honoris causa* degree conferred on me by the University of Trieste, I proposed the drawing up of a 'Magna Carta of Duties'. This project was received favourably by the Rector and the Academic Body. In December 1992 a first conference of scientists, from European and American universities, met at Trieste and drew up a draft of the 'Charter of Human Duties'.

This Charter, sponsored by the Italian government and approved by the United Nations, aspires to flank that on the rights of man of 1948 and others which have often and in different contexts been approved. It seeks to face up with the greatest urgency to the dangers which threaten the globe, the biosphere, and the survival of millions of species endangered by the action of man. As Ghandi expressed it: 'on the River Ganges of human rights there rise the Himalayas of human duties'.

It should thus be considered a moral duty of us all, both as human beings and even more as scientists and educators, to perform these duties, even at the cost of having to come up against opposing interests, dictated by the traditional spheres of influence connected with power. The International Council of Human Duties, of which I am the President, has made thousands of students of middle and high schools in Italy aware of the document of this Magna Carta.

In addition, in November 1993 at a meeting on the Charter of Human Duties in Trieste I proposed the idea of establishing the creation of an international network which would favour the exchange of information between existing women's groups and other which are being developed in all the regions of the planet. The plan of this organisation of women's solidarity, of which I am the Honorary President and which is called the Women's International Network, with the acronym WIN, Emergency and Solidarity, has today as its president the sociologist, Prof. Eleonora Barbieri Masini.

This initiative, which emerged in February 1995, gave rise to a meeting in the Campidoglio of Rome to women leaders from different parts of the world who described the situation which was to be encountered in their respective countries. At that time I observed that the art of war had been invented and administered exclusively by men and I expressed the hope that it was the more arduous task of the descendants of Eve to invent and administer peace.

The importance of the role that women can play is demonstrated by the results which have already been obtained, both at an individual level in small groups, without resorting to the support of the mass media, especially in developing countries. The solving of the questions and issues of different regions has required exceptional courage and organisational capacity because in some cases it has been in opposition to centuries-old dogmas.

In 1992 my sister Paola and I created a Foundation, giving to it the financial sources that we had available, in memory of our father whose career was that of an industrial engineer in Bari. The aim of this Foundation is today to help young African women from early childhood in basic education (literacy). The activity of this initiative flanks those which are already in existence and which are conscious of the fact that education is the only access key to a better future not only to mitigate the suffering of these tragically exploited populations but also because of the help that can be given to them depends the future of mankind. An African

proverb says: 'If we educate a boy we educate a person, if we educate a girl we educate a family, a nation'.

At the dawn of the third millennium, as an actor and a spectator of the twentieth century, I send to young people of both sex the message of knowing how to realise the potential that they are endowed with and to apply it within the most worthy human activities which are open to them.