

The background of the cover is an abstract, textured pattern. It features a mix of vibrant reds, oranges, and yellows, with some darker, almost black, spots and lines. The overall effect is reminiscent of a microscopic view of a biological specimen or a complex, organic structure. The colors are somewhat blurred and blended together, creating a sense of depth and movement.

Glaci Ribeiro da Silva

**Christian Rationalism
and
Experimental Science**

CHRISTIAN RATIONALISM
AND EXPERIMENTAL SCIENCE

GLACI RIBEIRO DA SILVA

*HE LEARNED TO FLY,
AND WAS NOT SORRY FOR THE PRICE THAT HE HAD PAID.
JONATHAN SEAGULL DISCOVERED THAT
BOREDOM AND FEAR AND ANGER
ARE THE REASONS THAT A GULL'S LIFE IS SO SHORT*

Richard Bach, Jonathan Livingston Seagull

**To my father memory,
who taught me not to fear to be different,
to fly...**

Contents

Presentation	5
Acknowledgments	6
Preface	7
1. Fluidic Water and its Secrets	9
2. The Thought of Spirits Picked up by Mediums.....	13
3. Cultivating Good Humor	17
4. The Narrow Limit between Depression and Obsession	21
5. Body Cult: a Possible Cause of Obsession.....	25
6. The Secrets of Sleep	39
7. The Use of the Power of Thought in Medical Clinic	43
8. The Polemic Return of the Psychosurgeries.....	47
9. The Prescriptions of Christian Rationalism and the Current Medical Science	52
10. The Role of Mediumnity in the Advance of Science	60

Presentation

This book, written by Dr. Glaci Ribeiro da Silva, answers an ancient craving from studios of the Christian Rationalist doctrine, which is to approach the knowledge divulged by Christian Rationalism to the conquests reached in the scientific researches that are already accomplished or in progress by the “official science”, term referred by Master Luiz de Mattos.

As researcher, doctor, and Christian Rationalist since infancy, the author gathers all necessary qualities to accomplish this work. The result is this series of reflection she offers us, associating Christian Rationalism with experimental science.

The topics are diverse, up-to-dated, and they will awake the interest from whoever aims to deepen his or her spiritualist’s knowledge through the study of Christian Rationalism’s teachings.

How many aspects developed by the doctrine’s books are waiting for works like the one the author developed!

Hopefully, it will stimulate all Christian Rationalists!

Elenir Aguilera de Barros.

Acknowledgments

Thanks to Dr. Humberto Machado Rodrigues for the incentive words directed to me, regarding the initiative of this work. Thanks to Mr. Gilberto Silva, and to the Doctrinaire Action Directory from Christian Rationalism's Chief House, for the favorable judgment valorizing this publication. Also thanks to the editors for the dedicated and careful job while editing this book.

Preface

This book contains a collection of articles I published in the Gazette of Christian Rationalism¹ from September 2003 to May 2004. Although they cover individualized topics, I intended to give them the same direction, that is, to show the connection between Christian Rationalism and experimental science.

Initially, the Christian Rationalism was called Rational and Scientific Christian Spiritism, explicating that Christian Rationalism is a spiritualist philosophy that is rational and scientific. It is also a Christian philosophy, because it was the doctrine Jesus Christ tried to establish on Earth. The term “rational” is used here as an adjective and means that “it uses the reason, it ratiocinates, it is deduced by the reason”. Using the reasoning and making deduction by the reason is a fundamental principle of science. Therefore, the spiritual philosophy of Christian Rationalism has tight connections with science.

But, Christian Rationalism, as a philosophy, has an essentially theoretical basis. In the other hand, science is experimental, because it is based on practical demonstration, on results obtained in laboratory. When making science experimental, the scientist has to be like Sir Thomas: see to believe.

In order to show the connection between Christian Rationalism and experimental science, I intended to surpass this issue, doing a parallelism between rationalist teachings and principles and facts already described in the conventional science.

In most of the chapters published in this book, I intended to unfold some teachings and principles of Christian Rationalism, presenting hypothesis sustained in facts already described by the conventional science, explaining in a rational way. Nevertheless, in some chapters, I used the reverse way, which means, I intended to explain through the Christian Rationalist philosophy, some topics that conventional science has not found a plausible explanation, yet.

For this book to have the proper credibility, it was necessary I had an extensive knowledge about the Christian Rationalist doctrine and the experimental science. Or, as stated by the philosopher and essayist Marilena Chaui, I should demonstrate the competence of knowledge.

That’s the reason of the brief description I am making, in the following paragraphs, of the knowledge I have acquired in both fields.

I was born in 1931, in Sao Paulo state capital, as a Christian Rationalist infant, and I also grew up within these doctrine’s teachings. The embryo of Christian Rationalism in my family was constituted by my parents, my mother's parents, one brother of my mother and his wife. According to the book “O Racionalismo em marcha em Sao Paulo”, page 42², this embryo took shape in Santos, city of Sao Paulo state, and its members personally met Luiz de Mattos and Luiz Alves Thomas – founders of the doctrine. Afterwards, this entire group moved to Sao Paulo capital, and there they became militants in the new-founded Christian Rationalism Center of this city. My father – Augusto Gomes da Silva – who later on graduated in medicine, was the founder of Christian Rationalism’s affiliate of Campinas, in Sao Paulo state where he still works as Astral President. During the 80’s, I started to

¹ Link at Christian Rationalism page in Portuguese: <http://www.racionalismocristao.org>

² Published by Christian Rationalism, at São Paulo Center.

develop mediumnity and I was mediumnist instrument of Christian Rationalism in Ribeirao Preto (SP), Campinas (SP) and Porto Alegre (SP) affiliates.

I am a doctor, graduated in 1957 by Escola Paulista de Medicina (EPM). My first contacts with the scientific world took place during my volunteer job in EPM as a Biochemical Instructor. I was so thrilled by that, I decided to follow the academic career, because scientific researches are mainly developed in the academic field.

By that time, whoever wanted to make science in Brazil would face a lot of difficulties, because there wasn't any Postgraduate courses in this country. One of the most common alternatives to resolve that issue was to acquire a foreign specialization, practicing in a university. So, I decided right after the graduation, to go to United States, staying there for three years performing Pharmacology practices in two American universities: Yale University and Tulane University. During that time, I published my first scientific works. When I returned to Brazil, I was invited to work in a brand new USP (Universidade de São Paulo) campus, in the city of Ribeirão Preto, where its specific objective was to make science and graduate scientists. There, I did my PhD in Medical Pharmacology and, after that, with Fapesp (Fundação de Amparo à Pesquisa do Estado de São Paulo) scholarship, I spent two years in Italy, doing my Post-Doctorate at Università Degli Studi di Roma. Returning to Brazil and perceiving that, as a doctor, it was important to have a clinic experience, I asked Gynecology and Obstetric USP Department for my relocation, where I stayed for six years. That clinic experience was a good apprenticeship for me, however it took me completely apart from my researches, because I've never agreed to make them, using the human being as a guinea-pig. In 1983, I got my relocation from USP to Unicamp (Universidade Estadual de Campinas), where I did experimental science again for more than seventeen years. Officially I retired in 1996, but I was connected to Unicamp as an Invited Teacher until year 2000.

Working more than two third of my professional life with experimental science, I learned we cannot be speculative and allow that beliefs without analyses keep us apart from reality. The reality is unique, and it is our duty to study it in a critical way. That was the direction I intended to follow, when analyzing the topics of the chapters I wrote in this book.

The Author (July, 2004)

1. Fluidic Water and its Secrets

PREPARING FLUIDIC WATER AT HOME

Prepare one or more containers with the desired quantity of water, next to them, one or more persons should say one irradiation to the 'Superior Astral' and six to the 'Great Focus'. Sick persons should drink a glass of this water every hour, whereas healthy persons may also drink it whenever they feel thirsty. It may also be used externally to clean wounds, or in compresses, either cold or warmed in bain-marie. This water, which is preventive and beneficial, should not be boiled, and may be used without restrictions. (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

Christian Rationalism has recommended the usage of fluidic water for a long time. It has been even routinely prepared in Christian Rationalist Centers after Particular Sessions.

It is observed, though, even among many members of the Christian Rationalist community, a particular skepticism regarding the therapeutic and preventive power of this water. Nevertheless, this fact has been constantly emphasized, not only by communications from Superior Astral, but also by many Christian Rationalist books.

Recently, two Superior Spirits – doctors during physical life – addressed this matter in their communications. Both are Astral Presidents of Christian Rationalist affiliates: Pedro Luiz Osório, from Porto Alegre's affiliate, and Augusto Gomes da Silva, from Campinas' affiliate. The last one, in a communication of April 2003, asserted:

Fluidic water is an important medicament for a sick body. One day, the medicine will study and demonstrate the benefic value of fluidic water. This time will come – everything comes in a proper time. And, from that time on, the humankind will see that, instead of spending a fortune with devastating medicaments, it would be much better to simply drink a glass of fluidic water.

Very probably, the main factor that generates skepticism related to the therapeutic proprieties of fluidic water is the lack of a scientific base that justifies such power. However, that scientific demonstration might not be so far. Recent researches have revealed amazing proprieties of pure water itself that could even help to explain the effects of fluidic water.

When establishing a contact through the irradiations with the Superior Astral, it is formed a favorable magnetic field that induces vibrations and emissions of spiritualizing fluids. Therefore, we could say that fluidic water is magnetized water that contains fluids released by the Superior Astral.

Nevertheless, if a scientific interpretation were given to the description done for this water in the books edited by Christian Rationalism, we could even mention other important

chemical and pharmacologic characteristics of fluidic water and we would verify that these properties make it radically different from pure water.

So, summarizing:

1. Chemically, it is thermo sensitive, that is why it can not be boiled, and it is also sensitive to solar radiations, so it can not be exposed to the Sun.
2. Analyzing now the fluidic water from a pharmacological point of view, we could say this water seems to contain one or more active principles that are thermo sensitive and sensitive to solar radiations.
3. The therapeutic action of fluidic water seems to be unspecific, because we could find no reference in any Christian Rationalist book about the action of this water in target organs and/or tissues. This fact strongly suggests that fluidic water would act increasing the power of reaction of our body against different damaging agents.
4. Because the defense of our organism is basically exercised by the immune system, it looks like this is a strong candidate to be the site where this water would act.

Logically, taking hold of modern and sophisticated techniques, many others physical-chemical properties of fluidic water are to be discovered.

The chemical characterization of active principles is difficult and expensive. Thus, it is generally preceded by a pharmacological analysis, aiming to verify, in laboratories' animals the effects of active principles to be studied.

In this case, a simple protocol could be easily executed. For example, it could be organized two groups of rats. These animals would be maintained in individual jails, within an environment of controlled light and temperature. Besides, all of them would be fed with the same ration pattern. The first group (experimental) would receive only fluidic water to drink, while the second group (control) would drink the same water, but not fluidic. After a certain amount of time (let's say, 30 days), the blood from these animals would be analyzed and many portions could be taken in order to verify what would be the target organs or tissues altered by the ingestion of fluidic water.

Studies about water are considered nowadays a very important research line. During a visit to Brazil, in the early 2003, the Englishman Peter Atkins, world physical-chemical authority, and Professor of Oxford University, when interrogated about the most promissory research fields of that time, was emphatic to affirm that one of those fields were the study of water.

This is a research line that has generated some of the most unusual scientific discoveries of the last years. Chemists and physicians are facing some strange phenomena, such as plants that grow more and faster when their seeds are irrigated with magnetized water. Or, by verifying that small changes in the structure of water can make it absorb more or less radiation.

Although, that vision about this topic is still polemic and restricted to some researchers, the main point is that this news can be the front door to important scientific improvements.

These reports, for example, have led many scientists to do new experimental studies about homeopathy, which ideas were supported by the German physician Samuel Hahnemann (1755-1843) hundreds years ago.

The conduct extolled by homeopathy seeking to treat patients with extremely diluted solutions of active principles ("medicaments") was always stigmatized by scientists

as ridiculous. In some cases, these solutions are so diluted it turns to be impossible to have even a molecule of this active principle in the water. So, the critics asserted that homeopathic medicaments were pure water and only worked as a placebo.

To explain this fact, Hahnemann stated that water was capable to keep the memory of whatever was in it. So, he created the expression “memory of water”.

Recently, the experimental work of the Swiss chemist Louis Rey (*Physica A*, in the press) demonstrated through thermo-luminescence that homeopathic medicaments could be different from pure water, a polemic that has been carried on for centuries. That article attained such a notability in the literature that was even cited in the prestigious British magazine *New Scientist*. It was also applauded by homeopaths all over the world, because it could give a natural explanation to the so-called “memory of water”.

Besides, in recent publications, many authors, such as Chaplin and Coghlan, have demonstrated that successive dilutions of certain substances in water increase the size of these substances, because they would form clusters. Although, the formation of these clusters, also called as “super molecules”, has not been explained, it has been suggested the hypothesis that it is resulted from the iteration of this substance with the molecule of water itself. It is also cogitated these super molecules could be the responsible for the therapeutic effects of homeopathic medicaments.

Some researchers are also defending the possibility of the existence of a second structure in water. In this second structure, the own molecules of water would be capable of getting united through the atom of hydrogen, forming clusters.

Research is an activity that requires a huge budget. That is why it is generally done at universities or at research institutes. In this case, the researcher can seek a budget at many research foment agencies to finance the execution of his or her project.

Beyond having a good résumé and knowing to compose a good project, there are now two important facts that can help the interested person to get the so dreamed budget for the financial support of his or her experimental study:

1. The up to date importance of water studies;
2. The growing global interest in the scientific evaluation of facts related to spiritualism. Recently, a specialized division for this matter was created at NIH – National Institute of Health – to judge the merit of the project and, if it exists, to release specific budgets to finance it.

It is known that the discovery of new facts usually generates a lot of polemics and suspicions among the scientific communities. That was the case happened with Beneviste, a famous French immunologist, in 1988 when publishing an article in the *Nature* magazine showing evidences about the memory of water. Then, the author was accused, in other article of the same magazine, of making pseudoscience. The result was the cancellation of the budget that Beneviste had to finance his researches, a real catastrophe for any researcher. Finally, in 2001, the reputation of Beneviste was again recognized by the community, and his polemic article was considered to be respectful to the scientific formalities.

But, even running such a risk, a scientist always has to fight for the truth of his or her discoveries, not mattering how strange it may look. That is the way the truth arises and science evolves.

It is a fight like that the scientists who decide - one day - to study the mechanism of the action of fluidic water will have to face. But, it will certainly worth it.

Bibliography

CHAPLIN, M. F. Fibre and water binding. *Proceedings of the Nutrition Society*, v. 62, p. 223-227, 2003.

COGHLANY, Andy. Bizarre chemical discovery gives homeopathic hint. *New Scientist*, n. 7 November 2001.

COMUNICAÇÕES e Cartas Doutrinárias: o Espiritismo Racional e Científico Cristão através de 1933. Rio de Janeiro: Centro Redentor, 1934. Água fluídica: p. 100-101.

DAVENAS, E; BEAUVAIS, F; ARNARA, J; OBERBAUM, M; ROBINZON, B; MIADONNA, A; TEDESCHI, B; POMERANZ, P; FORTNER, P; SELON, P; SAINTE-LAUDY, J; POITEVIN, B; BENEVISTE, J. Human basophil degranulation triggered by very dilute antiserum against IgE. *Nature*, v. 333 (6176), p. 816-818, 1988.

MILGROM, Lionel. Icy claim that water has memory. *New Scientist*, 11 June 2003.

NOGUEIRA, Pablo. Os Mistérios da Água, *Revista Galileu*, p. 73-77, August 2003

PRÁTICA do Racionalismo Cristão. 12. ed. Rio de Janeiro: Centro Redentor, 1989. Água fluídica preparada no lar: p. 51-52.

SOUZA, Luiz de. *A Felicidade Existe*. 11. ed. Rio de Janeiro: Centro Redentor, 1994. Irradiações: p. 173.

2. The Thought of Spirits Picked up by Mediums

(...) How do spirits act on mediums to extern their desires and opinions? They use some mediums' organs, just like the vibrations of phonograph record use some radio-receptor's parts in order to they become audible (...) (Felino Alves de Jesus. Trajetória Evolutiva, 1983, p. 217-221 translated to English)

But, after all, what would be the organs used by mediums to pick up the spirits' desires and opinions? This question is not answered in a straight way by any Christian Rationalist book.

In many Christian Rationalist books, when talking about mediumnity, the major concerns are both to describe the different types of this phenomenon and also to attract attention to the danger it could represent for those who practice mediumnity outside Christian Rationalist chains. Because these books are read by a heterogenic group of people, this topic is described without many details so that everybody could understand it.

The search for a possible answer to this question is the theme we want to unfold in this chapter, supported by the scientific facts already described in the international literature.

Intuitive mediumnity is closely associated with the structure of the embryonic telepathic element which is a reflex of psychic sensibility. In due time this element will develop and reveal itself. Therefore, intuitive mediumnity, incorporative mediumnity and the elementary functions of the embryonic telepathic element, operating in a coordinated, complementary way, make up the sum of three spiritual faculties. The development of these faculties, when performed under careful supervision, produces the best results in the picking up of thoughts of both incarnate and disincarnate spirits. (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

According to the paragraph above, there is a correlation between both intuitive and incorporative mediumnity and the rudimentary functions of a telepathic element that is still incipient.

But, after all, what is the “telepathic element” and where is it located?

Because the high sensibility of mediumnist faculty has a close connection with the nervous system, that telepathic element is probably located in the brain, which is located in the central nervous system.

In 1729, when the Astronomer De Mairan (1675-1774) stated that beings have cycles defined by the environment, the Paris Academy of Science sarcastically laughed about his ideas. Today, it is known that the great majority of biological phenomena are repeated obeying a certain periodicity, which means they are cyclically produced. The most evident of these cycles is the “activity and rest” (day/night) cycle, which is synchronized by the Earth's rotation. They are called *circadian rhythm* - from Latin, “around one day”, because they are repeated each 20 to 28 hours interval. It is also known that the majority of

beings, including the human being, have internal mechanisms that set the time, called *biological clocks*. Clocks are mechanisms that generate cycles and their final product, the one we can observe, is the *biological rhythm*.

This topic is studied by chronobiology, a field of neuroscience that was created and officially recognized in 1956. Nowadays, neuroscience has developed many methods to study biological rhythms and clocks, trying to investigate *how*, *when* and *why* our brain is modulated by natural cycles.

The circadian system is formed by a collection of structures that are located deeply in the inner brain. In the mammals, the controlling clocks of this system are the pineal gland and the supra-chiasmatic nucleus located in the hypothalamus, far behind the crossing of the optic nerve (or chiasm).

Until 1950, scientists considered the pineal – a small red wedge, with the size of a pea, deeply buried in the center of the brain – a mere residual organ without important functions.

René Descartes (1596-1650), a philosopher, mystic, and founder of modern mathematics, said that the pineal was the “seat of the rational soul”. There is an abundant literature about the pineal gland published by the Kardecist spiritism and by many esoteric sects. In this chapter, we are not considering this kind of literature, even though there are some curious facts in it, but from doubtful sources.

The systematic scientific study of pineal was only started at the end of the 50s. In 1958, Aaron Lerner and his team extracted a hormone from the pineal. This fact characterized the pineal as an endocrine gland. Lerner called this hormone as melatonin. But the importance of the pineal gland received more evidence since 1959, when Julius Axelrod, the great scientist and Nobel Prize winner, started to study and to enlighten some of the functions of this gland.

The pineal works strictly connected with the hypothalamus, controlling many physiological phenomena, such as thirst, hunger, sleep, sexual impulse, biorhythms, and even the biological clock of aging.

Initially, the pineal was an eye and its niche was an orifice excavated in the right parietal bone. It wasn't alone – its photoreceptor partner still exists under the skin of the back skull of some animals. This is the parapineal organ or the third eye of contemporary amphibians and reptiles. Now, the pineal was introduced deeply into the skull and installed in the ceiling of the third ventricle.

The pineal of mammals receives, through a nerve that originates from the retina, information about the conditions of light or darkness that predominate in an environment. Thus, the pineal of mammals also conserves its ancestral photoreceptive function, capturing and processing light energy.

In the evening, the pineal initiates the secretion of melatonin, releasing it to the blood stream. During the 24 hours of the day, this secretion reaches a maximum level in the darkness period and a minimum level in the light peak. So, it is used to say that melatonin is the *hormone of the night*.

Besides being a photo-neuroendocrine transducer, the pineal is also capable of computing time intervals. Thus, this gland is both a clock and a calendar.

The embryonic source of pineal is very similar to the lateral eyes, because both structures are developed from a diencephalic evagination. That can be said because of its evolutive and oncogenic history and because of its structures and functions, so the pineal appears to be the third eye of mammals.

Christian Rationalism has always emphasized the need of the human being to be disciplined in his or her way of living. The doctrine itself is ruled by several norms, where the timetable has to be strictly obeyed.

Because intuitive mediumnity is common to all human beings, it is very probable that disciplinary rules recommended by Christian Rationalism have as objective the better capture, by the doctrine studious, of good intuitions sent by the Superior Astral, because disciplining their way of living, people would make their pineal to become more sensitive and tuned. In other words, having discipline would mean staying tuned with the complex pineal organs.

In the mediums' case, because they are also endowed with incorporative mediumnity and, many times, with visual mediumnity, these recommendations are even more emphatic. In order to properly accomplish their functions, the mediumnistic instruments of Christian Rationalism need to have a "rigorously disciplined" life and have a specific time for every activity (*Practice of Christian Rationalism*).

The word "telepathy" means transmission or extra-sensorial communication of thoughts and sensations between two or more people. The communication between spirits and the medium is done through the thought, therefore, through telepathy. In the human being, the full development of the pineal gland has not finished yet, and it might happen in the evolution path. These facts would justify, thereby, the phrase "incipient telepathic organ" mentioned in the doctrine's books.

Our brain is an electric energy generator. This energy is generated in the neurons and walks in a special tube – the axon of the nerves. Thoughts produce magnetic vibrations. Thus, it is very likely that thoughts generate electromagnetic radiations in the brain. The circadian system reacts to the exposure to electromagnetic field that affects the production of melatonin (the hormone of night) by the pineal of mammals, because this gland has a *sui generis* sensitivity to electromagnetic radiation. Superior Spirits exercise more action in the Earth during the night. The communications given by Superior Spirits through the mediums of Christian Rationalism occurs at night, in the semi-darkness.

All these facts described above reinforce the hypothesis that the pineal (or the complexity of the brain structures where the pineal belongs) is one of the possible medium's organs responsible for picking up thoughts of spirits.

The probable involvement of pineal in mediumnity is still just a hypothesis. And, in order to it to be validated by conventional science, it would have to be experimentally proved by an accurate methodology. And this will be certainly provided in an opportune time, through the capture of intuitions from the Superior Astral by scientists of Christian Rationalism.

With the growing expansion of Christian Rationalism around the world and with the intensification of studies recently done on the pineal gland, chronobiology and biomagnetism, this experimental proof demanded by conventional science will certainly be given in a not so distant future. This is only a matter of time.

Bibliography

- AXEROLD, J. Pineal gland: a neurochemical transducer. *Science*, v. 28, p. 1321-1328, 1974.
- BROWNSTEIN, M; AXEROULD, J. Pineal gland: 24 hour rhythm in norepinephrine turnover. *Science*, p. 163-165, April 1974.
- BURK, D.H. Jr. The Basis of Bioelectricmagnetism. *Medical Acupuncture Journal*, v.2, p. 57-63, 1990.
- EAKIN, R.E. *The third Eye*. BERKELEY: University of California Press, 1973.
- ELDEN, C.A. Pineal: Still too Much To Learn. *Chemistry*, p. 22-25, May 1989.
- HOLANDA, Aurélio Buarque de. *Novo Dicionário Aurélio da Língua Portuguesa*. 2. ed. rev. e ampliada. Rio de Janeiro: Nova Fronteira, 1986.
- JESUS, Felino Alves de. *Trajatória Evolutiva*. 7. ed. Rio de Janeiro: Centro Redentor, 1983. A ação dos espíritos: p. 217-221.
- LOKLORST, G.J.C.; KAITARO, K.K. The originality of Descartes' theory about the pineal gland. *Journal for the History of the Neuroscience*, v. 10, p. 6-18, 2001.
- MARQUES, N; MENNA-BARRETO, L. *Cronobiologia: Princípios e Aplicações*. São Paulo: EDUSP p. 125-145, 1997.
- PRÁTICA do Racionalismo Cristão. 12. ed. Rio de Janeiro: Centro Redentor, 1989. Mediunidade e Médiuns p. 73-89.
- RACIONALISMO CRISTÃO. 42. ed. Rio de Janeiro: Centro Redentor, 2003. A Mediunidade, p. 217-224.
- REICHLIN, S. *Neuroendocrinology: Pineal Gland and Circumventricular organs*. In: WILLIAMS, R. H.; FOSTER, D. W.; KRONENBERG, H. M.; et al. *Williams Textbook of Endocrinology*. 7. ed. Philadelphia: W. B. Saunders, 1985. p. 492-553.
- REITER, R.J. The pineal gland and melatonin in relation to aging: a summary of the theories and of the data. *Experimental Gerontology*, v. 30, p. 199-212, 1995.
- SEGOVIANO, A.J.G.; RODRIGUEZ, R.C. A pineal e seus efeitos sobre o sistema imunológico. *La Academia*, v. 7, p. 35-43, 1997.
- SOUZA, Luiz de. *A Felicidade Existe*. 11. ed. Rio de Janeiro: Centro Redentor, 1994. Irradiações, p. 173.
- TRIPP, H.M.; WARMAN, G.R.; ARENDT, J. Circularly polarised magnetic fields does not acutely suppress melatonin secretion from cultured Wistar rat pineal glands. *Bioelectromagnetics*, v. 24, p. 118-124, 2003.
- WRIGHT, K. Os tempos da nossa Vida. *Scientific American Brazil*, n.5, p. 70-77, 2002.

3. Cultivating Good Humor

(...) Good humor and pessimism are irreconcilable. A good disposition paves the way to success because it overpowers defeatist thoughts and groundless fears, thereby driving nervousness away. (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

In this book, we intend to unfold some Christian Rationalist teachings, raising hypothesis supported by conventional science, explaining these lessons in a rational and scientific way.

The topic we are going to cover in this chapter is a theme found in many books of the doctrine, and also frequently covered in communications of the Superior Astral. We are referring to the cultivation of good humor, the happiness of living, the optimism and the serenity to face life's misfortunes. Let us see, then, how these Christian Rationalist teachings can be supported by the conventional science.

Some of the most important factors related to illness and wellness are the natural defenses of the human body. The structure in charge of these defenses is the immune system. Analyzing it in a very simplified point of view, the immune system is composed by many kinds of cells which main function is to attack and destroy substances that are strange to the organism. Every time we observe pus in a wound, we are watching the immune system in action. Pus is nothing more than a mass of white blood cells – an important component of the immune system – that go after the wound site in order to isolate or combat the infection.

The pioneer studies about stress were done in the 20s by Hans Selye, endocrinologist and director of Institute of Experimental Medicine and Surgery of the University of Montreal. This author showed that there is an evident connection between stress and illness. This connection is so strong that it is possible to predict a disease, considering the stress suffered by people in their daily routine. These studies were confirmed by researches done in laboratory animals, as well as in human beings, and also started to reveal the physiological process by which the emotional responses to stress could create susceptibility to disease. Basically, it has been demonstrated by many researchers that the effects of emotional stress can inhibit, partially or totally, the activity of the immune system leaving, thereby, the organism favorable to many diseases.

It took a lot of time for the medical community to start accepting Selye's ideas and to admit the principles of psychosomatic medicine. This delay was partially due to the orientation of clinical doctors, who adopt the following rule: physical problems are produced by physical causes and have to be treated through physical intervention.

Actually, what were missing for these ideas to become more acceptable by the medical community were researches that could identify a specific physiological mechanism by which the emotional states would contribute for the appearance of diseases.

Lately, this mechanism of partial or total inhibition (the latest is called “suppression”) of the immune system by stress has been deeply studied and is starting to be elucidated.

The survival of primitive society depended on an immediate identification of danger, and a fast choice between fight or flight had to be done. Nevertheless, modern life frequently compels us to inhibit our fight-or-flight responses, because they are not very socially accepted. Our body was planned in a way that moments of stress followed by a physical reaction, such as fight-or-flight, cause few damages. However, when the physiological response to stress is not discharged – because of the social consequences of fight-or-flight – this stress is not released and it becomes chronic.

Chronic stress very often produces hormonal imbalances, and these hormonal dysfunctions can lead to diseases. The arterial pressure, for instance, is balanced by hormones, and a person might become hypertensive because of chronic stress.

We all occasionally produce abnormal cells in the body capable of generating cancer. Generally, the immune system closely watches the appearance of these cells and destroys them. External agents, radiation, genetic inheritance and nourishment are four factors that play an important etiologic role in the appearance of cancer. The abnormal cells that generate cancer might have emerged naturally or from the harmful action of one of these etiologic factors mentioned above. But the remaining question is why our immune system doesn't take care sometimes and allow these cells to reproduce, becoming a malignant tumor. Regarding cancer, there are many clues indicating that the immune system suffers exclusion, which means, it is totally inhibited.

Besides Seyle's discovery, showing the suppression of the immune system by chronic stress, other studies have also suggested the involvement of mental factors in this suppression. They have been conducted by Humphrey and his collaborators in the United Kingdom Medical Research Council. These authors revealed that the body's immunity against tuberculosis could be deeply affected with the use of hypnotic suggestion, therefore, clearly demonstrating the influence of mental and emotional stress on the body's defenses. And, finally, Dr. George Solomon of California State University discovered that incisions done in the hypothalamus – part of the brain deeply involved in hormone production and also considered the most directly associated with emotions – lead to a suppression of the immune system.

Wellness depends on our thoughts and on the attitudes to face our lives. Elevated thoughts, happiness and good humor are real tonics for our organism and very efficient antidotes to combat stress.

If the full functioning of the immune system is important to prevent diseases, more important is to maintain it alert and healthy when we are sick. This was the theme of a recent Communication given by Augusto Gomes da Silva, Astral President of Campinas Affiliate (São Paulo, Brazil):

[...] The physical body is not healthy all the time. However, if a strong spirit commands this physical body, it will lose its fragility, because the spirit will know how to fight and win a serious disease whenever it appears. It is very important to face a misfortune with much serenity, calm, and good humor, if possible. It doesn't help to lament; it doesn't help to have a spirit of defeat. On the contrary, [it is necessary to] try to have a normal life, eat properly and have elevated thoughts.

Let us see now, how science experimentally demonstrates this other aspect of same topic.

Experimental studies of this type have been basically done by psychologists. These professionals use a tool to study it: the so-called *self-fulfilling prophecies*. According to these scientists, when we wait for something to happen, we act in such a way that it might really happen. That means, if a patient expects to get better, certainly he will take his medicines and will follow the diet prescribed by the doctor, raising, therefore, the possibility of his recovery. On the contrary, if he thinks he is going to die, or that it is not worthy to follow the recommendations from his doctor, he will end up succumbing. This example illustrates one of the basic characteristics of a self-fulfilling prophecy – the so-called *reinforcing cycle*: an expectation of success will often lead to success, proving that the original expectation was correct. On the other hand, an expectation of failure will generally lead to a negative result, validating the original negative expectation.

In brief, what these psychological studies use is the self-suggestion, in other words, the power of thought activated by will power. Thought is the most important human spiritual faculty. The essential doctrine book, *Christian Rationalism*, dedicates an entire chapter to thought, and we can take the following words from it:

*Thought is spiritual vibration, manifestation of intelligence, spiritual power (...).
Thinking means reasoning, creating images, conceiving ideas (...).
The spirit imparts to thought the very power with which it is endowed (...) The power of thought is measured by man's degree of evolution.*

In the same chapter of this book, there is the following paragraph:

The history of medicine records innumerable instances of serious diseases and their cures. These were considered by many as miraculous, but were due simply to the spiritual reactions of the diseased themselves and to their attraction of Superior Forces.

Thus, the teachings of the Christian Rationalist doctrine once again find an absolute and total support in science, because, through thought and will power, we are the ones who have the power to conduct our immune system, and we are the ones who decide if it will be directed to the cure or to the progression of a disease.

Bibliography

BATHROP, R. W. Depressed lymphocyte function after bereavement. *Lancet*, p. 834-836. April 16, 1977.

FARIA, Fernando. *Para quando os reveses chegarem*. 1. ed. Rio de Janeiro: Centro Redentor, 2000. Reveses: p. 57-66.

HUMPHREY, J. H. Cited in review of L. L. LeShan's book by P. B. Medawar. *New York Review of Books*, v. 24, p. 24, June 9, 1977.

- KLEIN, Jan. *Immunology*. Boston: Blackwell Scientific Publications, 1990. Regulation of the immune response: p 387- 391.
- RACIONALISMO CRISTÃO. 36. ed. Rio de Janeiro: Centro Redentor, 1986. O Pensamento: p. 119-124.
- ROSENTHAL, R; ROSNOV, R. L. (Eds.) *Artifact in Behavioral Research*. New York: Academic Press, 1969. Ver: The volunteer subject.
- SAMEL, Caruso. *Reflexões sobre os sentimentos*. 1. ed. Rio de Janeiro: Centro Redentor, 2001. A atitude: p. 46-50. O Pensamento: p. 310-314.
- SEYLE ,H. *The stress of life*. New York: McGraw-Hill, 1956.
- SIMONTON, O. C.; SIMONTON, S. Belief systems and management of the emotional aspects of malignancy. *Journal of Transpersonal Psychology*, v. 7, p. 29-47, 1975.
- SILVA, Glaci Ribeiro da. Tentando decifrar os segredos da água fluidificada. *Gazeta do Racionalismo Cristão*, September 2003 [Link at www.racionalismocristao.org .] (See chapter 1 of this book.)
- SILVA, Glaci Ribeiro da. Tentando decifrar os segredos da captação pelos médiuns do pensamento dos espíritos. *Gazeta do Racionalismo Cristão*, October 2003 [Link at www.racionalismocristao.org .] (See chapter 2 of this book.)
- SOLOMON, G. F. Emotions, stress, the central nervous system, and immunity. *Annals of the Academy of Sciences*, v. 164, p. 335-343, 1969.
- SOLOMON, G. F.; AMKRAUT, A. A.; KASPER, P. Immunity, emotions and stress. *Annals of Clinical Research*, v. 6, p. 313-322, 1974.
- SOUTHAM, C. M. Relationships of immunology to cancer: a review. *Cancer Research*, v. 20, p. 271-289, 1960.
- SOUZA, Luiz de. *Ao encontro de uma nova era*. 4. ed. Rio de Janeiro: Centro Redentor, 1977. A Força de Vontade: p. 91-97.
- A VIDA fora da matéria. 21. ed. Rio de Janeiro: Centro Redentor, 1996. Força do Pensamento: p. 39-41.
- WEINSTOCK, C. Psychodynamics of cancer regression. *Journal of the American Academy of Psychoanalysis*, v. 5, p. 285-286, 1977.

4. The Narrow Limit between Depression and Obsession

Obsession is one of the most distressing woes of mankind. (...) it must be admitted that, to a great extent, the victims themselves are to blame. This is because, while still sound, they harboured thoughts that facilitated the formation of attractive currents for obsessors. (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

In the last decades, science has evolved a lot, even though it has still been basically materialistic. And by not recognizing the incorporeal life, its evolution has been lower than it could have been.

The so-called obsessive-compulsive disorder – also known as OCD – is one of the most challenging mental illnesses for science; and science has dedicated many investigations to it, lately. However, if we analyze this disorder from the Christian Rationalist perspective, it will be easy to verify that its messenger is, actually, an obsessed person.

On the description of this pathology, it is observed many characteristics that are described in the essential book, *Christian Rationalism*, chapter “Obsession”, which symptomatology, the studious of the doctrine know very well. The conventional science detects the obsessive and compulsive symptoms (or incontrollable symptoms) present in this mental illness, but it can't properly explain it, recommending that, to control them, the patient uses some medicines and submits himself to a cognitive-behavioral psychotherapy.

This group of patients presents a very intense depression and a high suicide level. It is also observed a certain degree of anxiety in them.

Historically, the modern medicine has adopted, as mission, the cure of the symptoms of a disease, ignoring the sick person, who is the one having a daily relationship with a disease. And this behavior is reinforced by a medical model that completely chases away the hypothesis that mind influences the body in a considerable way.

In 1974, the psychologist Robert Ader discovered that the immune system, like the brain, could learn. This was a shock to the scientific community because until that time it was believed that only the brain had this capacity. Ader's findings led to the investigation of what are turning out to be myriad ways in which the central nervous system and the immune system communicate.

The presence of these biological pathways connecting the brain and the immune system shows the existence of a very intimate interconnection between mind, emotion and body. This study is done by Psycho-neuro-immunology, a discipline of modern Neurology, which has been very evident lately. The denomination of this discipline is a recognition of connections between *psycho*, mind; *neuro*, neuro-endocrine system (which includes the nervous system and the hormonal system); and *immunology*, immune system.

Recently, investigators of this area could better understand the role of stress in anxiety and depression. Below, we describe the conclusions reached by these investigators. Nevertheless, because of the convenience, we are adding some observations about

obsession to these conclusions. These observations appear in the conclusions within parenthesis in italic.

Our body is in homeostatic balance when many physiological indicators – such as temperature, glucose level, heartbeat rate, and others – are as close as possible of an “ideal” level. A stressor agent is anything capable of taking the body away from this homeostasis, and the response to stress is a sequence of physiological adaptations that end up reestablishing the balance.

This response mainly includes the secretion by the suprarenal glands of two types of hormones: adrenaline and glucocorticoids. These two hormones prepare the organism to face an imminent danger (“fight-or-flight”) mobilizing energy to the muscles, raising the cardiovascular tonus so that the oxygen can be transported faster through the blood circulation, and inactivating the not so essential functions for that time.

This response to stress can also be mobilized by mere anticipation. So, when somebody wrongly imagine (*possible intuition given by an obsessor*) that a treat to his or her homeostasis is about to happen, he or she could get into the so-called psychological stress (*possible activator of obsession*).

The pioneer works about psychological stress were already done in the 50s and 60s of the XX century. It was discovered that stress is exacerbated if there is no outlet for frustration, no sense of control, and no impression that something better will happen. So, it is much less probable that a rat will develop an ulcer in response to a sequence of electric shocks if it can gnaw an entire wood, because it has an outlet for frustration. Similarly, a person will become less hypertensive when exposed to painfully loud noise if he (or she) believes that he can press a button at any time to lower the volume, because in this case he has a sense of control.

But suppose such buffers are not available and the stress is chronic. Repeated challenges may demand repeated bursts of vigilance, leading an individual to conclude that he must always be on guard (*constant presence of an obsessor*), even in the absence of the stress. And thus the realm of anxiety is entered. Alternatively, the chronic stress may be insurmountable, giving rise to feelings of helplessness, even in circumstances that a person can actually master (*the obsessor has total control of her spirit*). Depression is upon him.

Anxiety seems to wreak havoc in the limbic system, the brain region concerned with emotion. One structure is primarily affected: the amygdale, which is involved in the perception of and response to fear-evoking stimuli. Interestingly, the amygdale is also central to aggression, underlining the fact that aggression can be rooted in fear – an observation that can explain, for example, the generally very aggressive behavior of people with inferiority complex, because the fear predominates in them.

In contrast to anxiety, which can fell like desperate hyperactivity, depression is characterized by helplessness, despair, an exhausted sense of being too overwhelmed to do anything (psychomotor retardation) and a loss of feelings of pleasure. Accordingly, depression has a different biology; the chronic release of glucocorticoid hormones induced by continuous stress decreases the noradrenalin level in another region of the brain – the *Locus Coeruleus* – provoking, then, the psychomotor retardation. Stress also produces depression, acting in the mood and pleasure pathways of the brain. In this case, there is a decrease of two hormones release: serotonin and dopamine; the first is important in the regulation of mood and sleep cycles, and the second is the main currency of the pleasure pathway.

Resuming, while anxiety is characterized by a skittish: torrent of fight-or-flight signals; depression is characterized by apathy, torpor and lack of desire to live (*ideas of suicide are intuited by the obsessor*).

It is interesting to notice that antidepressant drugs boost levels of serotonin in the gaps between neurons (the nervous synapses) and are capable to reduce the obsessive-compulsive symptoms, suggesting, thereby, that depression is the backdrop of the obsessive-compulsive disturbance.

It's important not to mistake these two mental pathologies with fortuitous episodes of anxiety and depression that anybody could have. So, it is perfectly normal to have anxiety when somebody faces a new and unknown situation, for example: starting a new job, taking an exam to enter college, defending a thesis, etc. Similarly, one could have a depression caused by the death of a loved one or by the end of a relationship, for instance.

There is a narrow limit separating anxiety and depression that are considered normal and the ones that are pathologic. These two events, even when are normal, provoke stress. And, as we explained before, stress inhibits the immune system; in continued stress, this system can be suppressed, rendering the organism totally defenseless. Thus, even if these phenomena are caused by a normal reaction, they should last as few as possible in order to avoid stress to become chronic. For that, it is important that a person uses the power of thought activated by will. These are the two most powerful weapons we all have to avoid obsession.

The essential book, *Christian Rationalism*, dedicates an entire chapter to obsession. Bellow are some phrases taken from that chapter:

Only the enlightened ones who are aware of the value of the powerful forces of Will and Thought are capable of keeping obsessors at distance.

How often does the mere departure of a loved one to eternity – something rather natural - leads to unconformity, distress and despair! The best that the incarnate can do on behalf of those who depart from Earth is to lift their thoughts up to the Superior Forces, with firmness and conviction. In this way those who disincarnated will be enveloped in the tender warmth of friendly irradiations and helped in breaking through Earth's atmosphere before leaving for the worlds where they belong.

Whenever there is deep affinity, obsessors do not part with their victims, because they enjoy staying where they fare well.

[...] a psychic disorder caused by improper use of free will, ill-guided will, sexual unrestrained and intemperance, lack of control in everyday life, uncontrolled nervousness, unrestrained desires, inordinate ambition, and headstrong temperament [are] the ways that lead to obsession.

Although there is not yet a consensus, many scientists have investigated the spiritualist ideas of Buddhist philosophy, lately. This is the case of Francisco Varela, an important Chilean psychoneuroimmunologist, author of many books about this topic. He lived the last years of his life (he died in May 2001) in France, where he was Professor of the Polytechnic School of Paris.

With the rapid worldwide expansion of Christian Rationalism during the last decades, it is very probable that, in the medium term, its spiritualist teachings about incorporeal life will be assimilated by others scientists, benefiting a big part of humankind who have obsession.

Bibliography

ADAMS, R. D.; VICTOR, M. *Harrison's Principles of Internal Medicine*. 10. ed. Japan: Mcgraw-Hill, 1983. Derangements of intellect, mood, and behavior: p. 136-145.

ADER, R.; FELTEN, David; COHEN, Nicolas (Eds.). *Psychoneuroimmunology*. Philadelphia: Academic Press, 2001.

BALDESSARINI, R. J. *Biomedical Aspects of Depression*. Washington DC: American Psychiatric Press, 1983.

CORDIOLI, A. V. *Vencendo o Transtorno Obsessivo-Compulsivo*. 1. ed. Porto Alegre: Artmed, 2003. As Prováveis Causas e o Tratamento do TOC: p. 2-18.

CORDIOLI, A. V. *Vencendo o Transtorno Obsessivo-Compulsivo*. 1. ed. Porto Alegre: Artmed, 2003. Psicofarmacoterapia do Transtorno Obsessivo-Compulsivo: Uma Revisão. p. 125-180.

RACIONALISMO CRISTÃO. 36. ed. Rio de Janeiro: Centro Redentor, 1986. A Obsessão: p. 194-202.

REICHLIN, S. Secretion of Immunomodulatory Mediators from the Brain. In: ALDER, Robert; FELTEN, David; COHEN, Nicholas (Eds.). *Psychoneuroimmunology*. Philadelphia: Academic Press, p. 345-365, 2001.

SILVA, Glaci Ribeiro da. Bases científicas dos ensinamentos do Racionalismo Cristão sobre o cultivo do bom humor. *Gazeta do Racionalismo Cristão*, November 2003 [Link at www.racionalismocristao.org .] (See chapter 3 of this book.).

SOLOMON, G. F. Emotions, stress, the central nervous system, and immunity. *Annals of the Academy of Sciences*, v. 164, p. 335-343, 1969.

VARELA, Francisco. Neurophenomenology: a methodological remedy to the hard problem. *Journal of Consciousness Studies*, v. 3, p. 16-40, 1996.

VARELA, Francisco; SHEAR, Jonathan (Eds.). *The view from within: first person approaches to the study of consciousness*. Exeter: Academic Imprint, 1999.

5. Body Cult: a Possible Cause of Obsession

Obsession [...] applies especially to those aspects in subtle, mild, periodical, permanent, bland, or violent form. [...] Its greatest danger lies precisely in the fact that its least shocking aspects go unperceived by those who are unaware of spiritualistic truths as divulged by Christian Rationalism. [...] Such individuals, even though they may not appear to be obsessed, create an environment which is extremely harmful to themselves and to members of their families or other people with whom they live. Thus they compel others, not having at their disposal the enlightenment to minimize the harmful effects of ill attendance, to share the same environment. (Christian Rationalism, Chapter Obsession, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

Practicing physical exercises is a very healthy activity and even recommended by books of the Christian Rationalist doctrine. However, what we are observing is an exaggeration and a pathologic mania of body cult, and, nowadays, this is the main objective of life for many people. Initially, they only have a subtle obsession, but, after certain time, they could enter into a more serious obsessive process, because, as Christian Rationalism teaches,

Whenever there is deep affinity, obsessors do not part with their victims, because they enjoy staying where they fare well. (Christian Rationalism, Chapter Obsession, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

This chapter also analyzes two aspects of the body cult: the *eating disturbances* and the *abusive use of drugs by bodybuilders*. And, for a better understanding, it is divided in two parts: the first part consists of eating disturbance and the second part, abusive use of drugs by bodybuilders.

EATING DISTURBANCES

Eating disturbances are diseases related to the Mental Health area. Two of these disturbances – nervous anorexia and bulimia – have attracted too much attention from professionals of many areas of Public Health, and also from laymen and scientists.

There are two types of psychiatric disturbances that are frequently present in anorexic and bulimic patients: depression and obsessive-compulsive disorder. In chapter 4, we analyzed these two disturbances, showing the correlation they have with obsession, justifying, then, the title of the current chapter.

Although, in XIX century the first cases of nervous anorexia had been described by the official medical science, only in 1979 bulimia was really considered a real eating disturbance.

Actually, these eating disturbances have always existed, and their symptoms were always the same. However, the motivation or the reason they appear varies according to the epoch.

The religions have always influenced the eating habits of humankind. At the beginning of the Christian era, many women saints ended up dying of starvation, because of fasting. Actually, they behaved as modern anorectic; however, the motivation was the body purification by searching for god. These religious influences over our alimentation hasn't been totally extinguished yet, because, today, there are still groups, such as Catholics and Muslims, who practice fasting or avoid certain types of food, because of religious reasons.

It was believed that provoking vomit could be benefic to the body or just to continue to eat more; this act was normally practiced by some Egyptians, Greek and Romans. The Romans constructions, called *vomitorium*, were the places used by them to vomit during the banquets.

Nowadays, fashion has the most influence over our eating habits. It imposes (and almost demands...), as a new beauty trend, that women should not be fat and always keep thin. If a dress doesn't fit or if somebody comments about the body shape, a woman is stimulated to start a new diet. These changes of aesthetic and behavior standards, that are now very common, are responsible for the real outbreak of eating disturbances.

The pressure exercised by the trio thinness-beauty-happiness, extensively divulged and supported by the media, has totally hit the feminine public, especially the teenagers, and body cult has rapidly become the fixed idea of many women.

Following this philosophy track, a complete machinery to collect money was installed. So, starting from the 70s, a growing number of gyms, specialized magazines, dietetic products, and clothes appropriate for gym have arisen.

Thus, the economic power now has a huge interest to perpetuate and stimulate the necessity of all women to become thinner. This is done by making them believe that this new aesthetic standard is the real recipe of happiness.

It is doubtless that fashion and thinness stimulus are increasing the risk of developing an eating disturbance. However, we, the society, are the ones who create the beauty standards. Therefore, if we create it, we can also change it. Of course, we need courage to do it, especially to sustain the contrary pressure from the people who earn money (lots of money) at the cost of body cult.

In order to decrease the chances of having serious complications, and sometimes even fatal, caused by these two diseases, it is important to do an early identification of their existence.

This is rarely done by the own patient, because she always tries to hide and deny the practices that she compulsively uses to keep thin. So, it is the family's duty to know the symptoms of these disorders to stay always alert.

The nervous anorexia commonly occurs in the teenager or young woman, but it can also occur in the male teenager, in the child reaching puberty or even in the older woman in menopause.

This disorder is characterized by an intentional weight loss. The term "anorexia" means lack of hunger or loss of appetite. But the patient with nervous anorexia has a normal appetite, which means, she is not really anorexic, but fight against hunger to lose weight without having a real need to do so.

These patients have a morbid fear of getting fat or being fat, so they impose a low weight upon themselves. The strong desire to get thin makes these patients do diets, do

exaggerated physical exercises, provoke vomit after meals, and use laxatives, appetite suppressants and diuretics. Besides these patients have a variable level of sub-nutrition, it can also be observed:

- amenorrhea: lack of menstruation for three or more months;
- dry skin;
- cold intolerance;
- hair loss;
- deep eyes;
- bradycardia: retardation of cardiac rhythm, i.e., the heart beats more slowly;
- hypotension;
- edema: swelling;
- lanugo: fine and soft hair covering the face or other body parts;
- irritability.

The depression and obsessive-compulsive disorder of these patients are also the responsible for the following symptoms:

1. in the depression case: deep sadness, loss of pleasure in activities, despondency, diminution of energy, insomnia or very light sleep, interrupted or restless sleep. When the disease is more advanced, it can even lead to suicide attempts;
2. in the obsessive-compulsive disorder case: the patients have a obsessive-compulsive behavior, which means they have mania. These people are disturbed by thoughts and repetitive behaviors. They feel like they are imprisoned by them. Although they consider these thoughts as absurd and disagreeable, they can't control them and make them disappear. There are many examples of these kind of behavior: some of these people wash their hands compulsively and for a long time, because they are afraid they are contaminated; other people are attacked by continued and repetitive doubts: they close the doors of their houses, cars, gas meters, etc.

The word "bulimia" is derived from the Greek *bous* (ox) and *limos* (hunger), which is a huge appetite, so that a person could be able to eat an ox. In more than 90% of cases, bulimia hits women, mainly teenagers and young girls, between 20 and 30 years old.

The bulimic patient doesn't have the exaggerated thinness like the anorexic does. She is generally able to keep the expected weight for her age and height. But behind that, she – like the anorexic – also has a huge dissatisfaction with her body (distortion in the perception of body image).

In the bulimic patient, there are two alternate phases. In the first phase, called *bulimic episode*, the patient has frequent compulsive eating attacks, ingesting a huge amount of very caloric foods. Generally, these foods are sweet, have texture that allow a fast ingestion and, frequently, are swallowed without being chewed. The patient can't control nor avoid this indiscriminate overeating. Some bulimics are even capable of eating paper, cigarette stub and dog food, during a bulimic episode. Nevertheless, it is important to remember that an isolated bulimic episode doesn't mean that a young girl has bulimia. It

needs to be frequent: for example, twice a week during three continuous months, and also it has to be followed by other symptoms.

The phase after the bulimic episode is called *purgation*. In this phase, the patient, to prevent the weight gain that she thinks it may happen after an indiscriminate overeating, does fasting, provokes vomit, makes exaggerated physical exercises, and uses appetite suppressants, laxatives and diuretics.

Besides depression and obsessive-compulsive disorder symptoms, these patients may also have:

- ✓ sore throat or stomachache caused by frequent vomits, because it exposes the esophagus and the pharynx (sore throat) to the gastric juice, which is very acid; on the other hand, an inflammation is developed in stomach itself (gastritis);
- ✓ weakness with easy fatigue and faint, caused by very strict diets and by the consequent dehydration induced by vomit;
- ✓ swollen and painful face, simulating a patient with mumps; it happens because of the constant stimulation the vomit induces in the parotids glands so that they secrete saliva;
- ✓ abdominal pain, nausea, diarrhea, constipation and swollen belly sensation, generally caused by laxative abuse;
- ✓ bloody vomit: this blood emerges from the wounds in the stomach and esophagus caused by constant vomit and vomit effort;
- ✓ menstrual modifications and infertility;
- ✓ cramp and muscle pain, caused by the lack of important nutrients and by the loss of calcium and potassium.

A more complete description of other symptoms and more details about bulimia and nervous anorexia can be found in many Internet web sites, as well as in two articles we published about this topic in the newspaper “A Razão” (see bibliographic references at the end of this chapter).

Adolescence is a period of time when many changes occur. The hormonal inundation that is characteristic of this period totally changes the body of the teenagers, who have now to readapt to the new corporal image. Thus, it is not strange that the most critical time for a child who has predisposition to contract these diseases is during or right after the puberty. The changes that happen with them in this period disturb and disorient these teenagers.

According to some psychiatrics, the decision to be thinner, at any cost, can be a desperate attempt they make to control, in this new exhausting environment, at least their own body.

The exact cause of these diseases are still unknown by the official science. The scientists who study this subject have concluded that there is not a unique cause for the eating disturbances. On the contrary, there are many causes and it could have three different nature types: biological, psychological and socio-cultural. All these collection of causes are interrelated and, depending on the person, they act with different intensities. This explains why it is so complex, for the physician who doesn't have a spiritualist vision, to deal with those two pathologies.

When isolated, each one of these causes is probably not enough to make an eating disorder manifest. However, it creates a favorable environment to the disturbances to manifest in a person that is already predisposed to have them. Isolated facts, such as, for example, making diets, living in a family with perfectionist trends, and even having a close relative with these diseases, don't necessarily lead to the appearing of the eating disturbances, because they are only triggered by a collection of causes.

So, it is easy to understand that, in order to the doctors to make the diagnostic and properly treat these two diseases, they need to investigate very well what are the biological, psychological and social influences that have contributed to their appearance. This can be evaluated by a psychiatrist, but the treatment of these disturbances requires the presence of a multidisciplinary team composed by, at least, three more professionals: a psychologist, a general physician and a nutritionist.

The treatment should be, whenever it is possible, ambulatory, but in more serious cases, the patient should be placed in a hospital. These two eating disturbances are chronic diseases and, therefore, the patient could relapse. The response to the treatment is generally slow, and lasts few months. The patient should continue her treatment, even though the symptoms get better, until the team judges she can go back home. It is important to point out that the discharge decision must never be done by the own patient, because she would tend to hide the symptoms.

These eating disturbances occur, more frequently, in the high society. But, because it involves a team of qualified professionals, the treatment becomes too expensive and, most of the times, economically unsustainable, even for a wealthy family.

For this reason, it was very laudable the initiative from the *Instituto de Psiquiatria do Hospital das Clínicas da Universidade de São Paulo* (Institute of Psychiatry of Clinicas Hospital of Sao Paulo University) to create, in 1992, in Sao Paulo, Brazil, the *Ambulatório de Bulimia e Transtornos Alimentares* (Bulimia and Eating Disturbances Ambulatory) – the AMBULIM.

The AMBULIM was the first Brazilian center to offer free treatment for these disturbances. Besides serving hundreds of patients all over Brazil, it is also involved in research and teaching activities. There is there a constant concern to offer information to doctors and health professionals, helping them to recognize these disturbances and alerting fathers and teenagers to seek specialized and competent assistance early.

We hope that in the early future a Health Professional with Christian Rationalist background will join a serious group, such as AMBULIM or another similar one, bringing them the spiritualist way to treat these two mental diseases.

ABUSIVE USE OF DRUGS BY BODYBUILDERS

[...] Through thought [disincarnated spirits] identify the feelings of the living, their intentions and tendencies. Obsessors take advantage of this to encourage human vices and weaknesses through intuition. (Christian Rationalism, Chapter Obsession, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

The current medical science, worried about not to stigmatize and not to create prejudices against certain groups, has substituted the word *vice* or *addiction* by the word

abuse, without, however, changing the old concept of addiction. Thus, the expression *drug addiction* was substituted by *drug abuse*.

Most of the medicaments synthesized by the pharmaceutical industry are *drugs*, because they are chemical substances. The abuse can occur either with *illegal drugs* (cocaine, marijuana, heroin, crack, etc.) or *controlled medicaments*.

The controlled medicaments are divided in two categories: the over-the-counter drugs and the prescription drugs, meaning that they can only be sold by a doctor prescription.

The two main groups of drugs that can be abusively used by bodybuilders are the *appetite suppressant* and the *anabolic steroids*.

The physical beauty is an attribute desired by everybody. But, it is more related to self-esteem rather than, as many people think, to the weight-height relationship, or to the size and amount of muscles a person has.

The desired physical beauty standard is constantly changing with the influence of social-cultural factors and fashion. Before, the fat of both genders were associated to power, health and, in some places of the world, beauty.

In the women case, besides physical health and wealth, the plump look also meant fertility and maternity, the main roles exercised by the women's society of that time. In the XVII century, for instance, fashion meant to be fat, and the painters always pictured plumped women. This was the case of Rubens, an important painter of that time who painted almost two thousands pictures of women that, by our standards, would now be considered too obese. So, when painting, the artists showed how the society desired to see those women and, therefore, how they wanted to be.

Nowadays, reflecting the change of feminine behavior in the society, where a woman, beyond being a mother, also exercises other important roles, the standardized feminine look has radically changed, from the obese woman to the thin woman, where the last one represents independency, self-confidence and success. It is the thin woman who prevails among television artists, beauty conquests and fashion models.

Now, fashion says that being thin is very important and women end up thinking that, if they were thin, as a model, they would be loved, rich and famous...

Dieting and taking drugs to get thinner are, nowadays, a real obsession. And it mainly hit women. Most of them, who diet, who take these drugs, and who suffer by fearing the scale, don't need nor should be doing anything like that. These acts increase the risks to their health.

The teenager population is always the most involved with this fashion. The teenagers have the tendency to be part of a group, and to not feel excluded by the group, so they strictly follow the rules dictated by it. And this includes the physical standards imposed by the momentary fashion. The social pressure for thinness and the cruel association between being thin and having success and happiness hit these young people, mainly by the communication means, because this standard is widely divulged and supported by the media.

Because their physical bodies are in a formation process, these teenagers suffer, they feel they are too fat, or too thin, or that they don't have developed muscles, or that they have small breast or too big breast – in short, they feel themselves clumsy... And then, they are capable to transform these little inconveniences into big tragedies. All these tend to get worse because of another young characteristic: they love to see themselves in the

mirror... Another situation is even more terrifying to them: the exaggerated body exposition that mainly occurs in a tropical country, such as Brazil.

In order to keep a healthy and young body, nothing substitutes the association between rational and balanced eating and moderate physical exercises. But, to speed up this situation process, people intend to resolve these problems buying drugs in the nearest pharmacy counter. This simple solution is generally not the best one, besides, it involves risks, and some of them are very serious.

In order to sell products, the publicity creates weak points in their potential consumers and promises to resolve their problems.

The pharmaceutical industry, one of the most powerful of the world, has used this publicity technique to launch the so-called *anorexigenics*, *appetite inhibitors* or *appetite suppressants* into the market. Then, it was born the weight loss industry, estimated to be almost a hundred billion dollars worth. The massive and aggressive propaganda this industry has done with their products has hit the medical class, who started to prescribe them, without the necessary scientific basis and, most of the times, by the insistence of their own customers.

In brief, the economic and the socio-cultural factors stimulate and keep the ideal modern woman's image as being thinner and thinner.

Logically, being really obese is not healthy. The real obesity, the one that is called morbid, always needs a proper medical treatment.

We are not going to talk here about the obesity treatment itself, but about the improper use of appetite suppressants by people with weight slightly over the normal.

But, what it is generally noticed is an inversion of roles: the obesity diagnosis is not done by the doctor, but by the patients themselves who think they are fat and, in their own understanding, this reason is sufficient to auto medicate or to pressure the doctor to prescribe an appetite suppressant.

These people generally have low knowledge about the drug they are using, and most of them have the following ideas about these drugs:

- ✓ *they burn fat*: this kind of idea makes a person feel tempted to increase the recommended dose of the drug, in order to burn fat quicker, exposing this person to even higher risks;
- ✓ *the formula I use is natural and is done in a prescription pharmacy specially to resolve my problem*: these people feel safe by not using a commercial pharmaceutical product. The fact that the drugs contain products of vegetal origin in the formula makes these people have a false idea that these products are natural and, therefore, they are not unhealthy. This is reinforced by the fact that some prescription pharmacies use names such as “natural”, “nature” and so on.
- ✓ these people think that these drugs are the only way to make them become thin, and they completely forget the healthy habits, such as nutritional reeducation, physical exercises, etc.
- ✓ generally, these people don't know anything about the collateral effects of these drugs, such as dependency, changes in the heartbeat, alterations in the nervous system, etc.

APPETITE SUPPRESSANTS

Our appetite is controlled by the central nervous system (CNS), specifically the brain. Most of the appetite suppressants are derived from a substance called amphetamine. Because this drug is a CNS stimulant, it suppresses the appetite, provokes agitation, nervousness, hand tremors, insomnia, heart attack, etc. Logically, these other effects are collateral or adverse, because they are not desirable by someone who only wants to suppress or moderate the appetite. To neutralize these adverse effects, a diazepam sedative is added to the appetite suppressants. This is another danger of these drugs, because, after a short time using it, a person becomes addicted by these two substances: the amphetamine derivatives and the diazepam sedatives.

Brazil is one of the world champions of amphetamine appetite suppressants. During the 80s, this consume used to be 23.6 tons, yearly. Contrasting with this, the use of psycho-stimulators in Europe, during the 80s, was twenty times lower than in Brazil. Nowadays, this use, comparing with the use in Brazil use is even lower.

In a United Nations report made in the 90s, Brazil was cited as the biggest *Fenproporex* importer, this is one of the amphetamine appetite suppressants that is widely used among Brazilians. Brazil imports around 60% (!!!) of the world production of this drug. Because of that, the United Nations has requested that Brazil justify the reasons of such a high use.

The growing rise of the use of these drugs and the risks involved made the Ministry of Health of Brazil to create, in 1993, a Group of Study of Anorexigenic. This group was composed by many professionals of the health area and had as objective to analyze the use of these drugs, and find strategies for a rational use in the treatment of obesity.

In November 1993, this group created a judgment to the Ministry of Health; which main topics are summarized and transcribed below:

- ✓ the reasons for the high use of drugs for appetite suppressants in Brazil is not auto-medication, but legal ways, i.e., medical prescription;
- ✓ who basically sell these drugs are the prescription pharmacies (also called as compounding pharmacies), and not the pharmaceutical industries, through industrialized drugs;
- ✓ most of the formulations elaborated by the prescription pharmacies have benzodiazepines associated with amphetamine drugs;
- ✓ in brief, the prescription pharmacies exercise a preponderant role in this reality;
- ✓ this finding can explain the real explosion of the rising number of prescription pharmacies opened during the last years;
- ✓ the amphetamines and benzodiazepines are the most used drugs without medical objective by students of elementary and secondary schools;
- ✓ although, this use is illegal, it is mostly done by legal ways, i.e.: there is a patient, an authorized doctor, and a prescription that totally agrees with the Brazilian rules; in the formulation, there is even a pharmacy authorized by the Ministry of Health to manipulate psychotropic drugs and a pharmacist able to fill the prescription;

- ✓ it was verified that pre-manufactured formulations are sold in inappropriate places, such as doctor's office, boutiques, female stores, etc;
- ✓ the most serious consequence of the abuse of the uncontrolled formulations is the very serious verification that a huge amount of products called naturals contain, fraudulently, amphetamines and benzodiazepines drugs, that are not mentioned in the label.

After this study, many prescription pharmacies of Sao Paulo were closed by the Ministry of Health, and a higher vigilance about the prescription and about the unauthorized anorexigenic sale is being exercised.

ANABOLIC STEROIDS

The anabolic steroids are substances that provoke retention of the nitrogen furnished by the food, raising the synthesis of proteins. The anabolic steroids also promote the deposit of these proteins into the minced skeletal muscle tissue. Consequently, these substances have the property of raising the muscles and the corporal weight.

Nevertheless, these agents, whether natural or synthetic, are not exempt of risk for who use them, because they can also develop cancer.

Two of the hormones produced by our organism have anabolic properties. They are the testosterone, which is the masculine hormone, and the growth hormone, also known as GH.

The testosterone or androgen is produced in the testicles and it has a steroid structure (that's why the expression *anabolic steroid* is used). The growth hormone is produced in the anterior pituitary (adenohypophysis) and has a protein structure.

This structural difference between these two hormones also explains why the anabolic steroid can be taken by the oral route, while the GH has to be injected by the intramuscular or subcutaneous route. This happens because, differently of proteins, such as GH, the steroids are not destroyed by the gastric juice.

The fact that testosterone is an anabolic steroid is the physiological reason that most male species have more developed muscles than females.

The anabolic hormones have a specific medical use, but they are also indiscriminately used (abusive use) by bodybuilders and athletes. Their use, in this last case, is related to the increase of their muscular mass so that they have a better physical efficiency. This practice is considered doping by sports entities.

We are now going to describe more detailed the characteristics of these two types of anabolic steroids.

When produced by the organism, the anabolic steroids are fundamentally important. Among them there are the sexual hormones, both the masculine and the feminine.

The commercial anabolic steroids are substances which structure is similar to the testosterone, but produced by the pharmaceutical industry. They are, thereby, synthetic products. In the laboratories of these industries, the chemical structure of the natural androgens is modified to raise its anabolic property and lower other effects.

Drugs based on these substances are used by doctors to help in the treatment of many diseases, for example, the aplastic anemia, the breast cancer, etc. They can also be used to improve the conditions of debilitated patients, such as patients with advanced

cancer or AIDS. These drugs increase the appetite and contribute to improve the general condition of these patients.

However, these drugs, that are useful when prescribed by doctors to certain patients, can become very dangerous when taken without medical orientation.

The abuse of anabolic steroids is practiced by some professional athletes, both males and females, and by young men, generally teenagers. The first ones take these substances expecting to improve their physical strength and their athletic performance, and the second ones, to improve their physical aspect.

Scientists have demonstrated that, although the harmful effects of these drugs always manifest in healthy people, the so dreamed muscular increase doesn't happen with them.

Thus, these people usually take huge daily dosages of these anabolic steroids, trying to see their body full of muscles – even 26 times greater than the dosages prescribed by doctors!!! So, the harmful and toxic effects of these drugs are increased and this conduct becomes very dangerous, because it seriously damages the health of the users.

The effects of these drugs in the human organism are devastating. The most serious effects are the heart attack – a very common cause of sudden death in young athletes who take anabolic steroids – and also the high predisposition to develop liver cancer.

In the men case, the anabolic steroids are also related to the prostate cancer. Because these drugs atrophy the testicles, they can result in the fall of sexual desire (libido), impotence and male sterility. Men who use these drugs are also subject to an excessive development of breast (gynecomastia).

The breast cancer, a disease that is commonly related to the female gender, has increased among these men. It occurs because of the inhibition that these anabolic steroids produce in the secretion of the natural hormone – testosterone. And the fall of the level of this endogenous testosterone provokes the gynecomastia, increasing the chances of the appearance of malign breast tumors.

In the women, besides most of the adverse effects previously described for men, some other effects also appear: the hirsuteness (growth of the body hair), grave voice, alopecia (hair loss) and acne (pimple).

The anabolic effects of these steroids rapidly disappear when someone quit taking them, but their adverse effects that were mentioned above, are irreversible, which means, they remain even in the absence of these drugs.

Lately, these products have been divulged and sold in the Internet. Teenagers with all their insecurities and emotional instabilities are, certainly, the main targets of this type of marketing. And, even more serious and more concerning is the fact that these anabolic steroids are disguisedly sold as eating complements. The anxiety these young people have to imitate television heroes or movie stars ends up making themselves the main victims of this dishonest marketing.

Male people have always been the greatest victims of anabolic steroids. While in females this abuse only existed among athletes.

In the other hand, recently, women were hit hardest by the fashion of having a good-looking body, so the amount of admissible muscle a female body can have has gradually increased. So, we have reached the "body shape" era, where women have lost the fear of having their femininity questioned, and they have become muscular. Consequently, the pharmaceutical industry has got new customers, because women have joined men as

victims of these drugs. It is clear that most of the female users of these anabolic steroids are, again, teenagers.

GROWTH HORMONE (GH)

GH is one of the hormones that is responsible for the distribution of nutrients in our organism. It is also responsible for the general and isolated growth. Although this is its most evident action, it also has other functions, such as: increase the muscle mass, strength the bones, increase the cardiac and pulmonary capacity and, also, positively act in the mental field, improving, for example, the memory.

The decrease of its secretion during childhood produces the hypophyseal dwarfism, which means that if a child is not treated with GH, he or she will become an adult dwarf.

The anabolic effect of GH is much more discrete than that produced by the anabolic steroids. But, GH also has a lipolytic effect, that is, it destroys fat. It happens because of the action GH has over the fat metabolism, promoting its mobilization. Consequently, instead of glucose – its natural fuel – the organism will start to use this mobilized fat as fuel, and will burn it (lipolytic action).

This is the lipolytic effect of GH that, together with its anabolic effect, arouses interest of athletes, bodybuilders and power lifters. However, it didn't take too long to this knowledge to reach the non-expert population, as well.

Two facts have influenced the recent popularization of the abusive use of GH among non-experts. One of them has economical aspects and the other is intrinsically related to the own GH hormone.

GH is a hormone that has a protein structure, so it is hard to be obtained. Initially, it was extracted from human cadavers and sold for astronomical prices. Nowadays, the synthetic GH is used instead. GH is made of bacteria that are genetically manipulated (genetic engineering) and, although it is still very expensive, its price, since the 80s, has started to fall, making its acquisition easier.

The other fact, the one with intrinsic aspects related to GH itself, is that this hormone doesn't produce the collateral effects that are most feared by users of anabolic steroids: loss of libido and impotence.

The divulgation of these facts was extensively celebrated by GH followers and also by the pharmaceutical industry. Between 1997 and 1998 it was reported a rise in GH sales of 80% in Brazil. In parallel, at the same time, the income of the pharmaceutical industry in Brazil jumped from 70 to 150 millions of dollars.

GH is a product controlled by the Health Ministry that only authorizes its sale with medical prescription. After GH has been transformed in one of the substances with free circulation among wealthy people and Hollywood artists, ampoules of these drugs are invading, without being noticed, Brazilian gyms and aesthetic centers. And these are the places where the parallel and illegal market of the hormone works, and it generally arrives in Brazil through smuggling. But, despite of the price, that is still high, and the painful puncture (protein hormone only acts when administered by intramuscular or subcutaneous injection), the abuse of GH has increased a lot, not only among athletes, but also among gym users – most of them, young people.

The use of this hormone by athletes is considered *doping*. But, unfortunately, there isn't a simple method allowing this detection in the urine or blood, as it happens with

anabolic steroids. And this is very convenient for athletes and, certainly, their abusive use of GH increases even more.

GH has been commercialized since the 1960s. This drug was only indicated for children with low stature. After the decrease of its price caused by the launch of synthetic GH in the market, other medical indications of GH emerged to combat adult diseases. In order to recover the muscle mass, increase weight and improve the general condition, many debilitated elderly people, people with AIDS, and patients with cancer in its advanced stage started to be treated with GH. Actually, the physical and psychological improvement of these individuals during the treatment with GH is clear, but the effects of an overdose of this hormone in healthy people are unknown.

It didn't take too long, however, for this conduct to reach healthy people and bodybuilders. If it increases the muscles of people with AIDS, why not increase the muscles of bodybuilders in gyms? Hiddenly used, this new bodybuilder's hormones make a lot of success, especially among executives and rich young people, who are able to pay their price.

But, using GH abusively is as much devastating as using anabolic steroids indiscriminately. Maybe it is even worse, because in the GH case, the collateral damages haven't been properly studied, yet.

Although, GH doesn't change the libido and the virility of its users, it does other damages that can also be irreversible. So, for example:

1. if the user has genetic predisposition to diabetes, it is almost certain that, if he takes the drug, he will be diabetic;
2. because the hormone stimulates the cellular multiplication (that is how it increases muscles), there are suspicions that it is involved in the cancer development;
3. GH can also produce abnormal bone growth; due to this, its users may have pointed chin, disproportioned hands and pain in the articulations;
4. the fact that GH is lipolytic makes the fatty acids increase in the blood, because fat is formed by "small bricks" of these acids; this blood that is rich of fatty acids, when passing through the liver, can lead to the so-called "fatty liver" – a serious pathology that, besides disturbing the function of this so important organ in our organism, can predispose it to cancer;
5. as it happens with anabolic steroids, the abusive use of this hormone can also cause the increase in the volume of breast;
6. increase heart muscles; the heart becomes overcharged, and a heart failure may occur.

But, as it looks like, even without the support of science, the success of GH is still growing among the non-expert population. Because there are substances that, physiologically, are capable to stimulate the secretion of hormone by hypophysis, they are now, the new targets of abusive users of GH. American laboratories are selling a cocktail made of these stimulating substances. The "anabolic cocktail" is perfect for those who don't like injection, because they are sold in effervescent tablets.

Bibliography about Eating Disturbances

CORDÁS, T. A.; COBELO, A.; FLEITLICH, B.; GUIMARÃES, D. S. B.; SHOMER, E. (Eds.). *Anorexia e bulimia: um guia de orientação para pais e familiares*. Porto Alegre: Artmed, 1998.

DROSSMAN, D. The Eating Disorders. In: BENNET, Claude; PLUM, Fred. (Eds.). *Cecil Textbook of Medicine*. 20. ed. Philadelphia: W. B. Saunders. p. 1158-1168, 1996.

FOSTER, D. W. *Anorexia nervosa and bulimia*. In: PETERSDORF, Robert G.; ADAMS, Raymond D.; BRUNWALD, Eugene; ISSELBACHER, Kurt J.; WILSON, Jean D. (Eds.). *Harrisons Principle of Internal Medicine*. 10. ed. Japan: McGraw Hill Book, p. 446-448, 1983.

SILVA, Glaci Ribeiro da. Anorexia Nervosa. *A Razão*, Rio de Janeiro, p. 9, December 2002.

SILVA, Glaci Ribeiro da. Bulimia. *A Razão*, Rio de Janeiro, p. 9, January, 2003.

SILVA, Glaci Ribeiro da. Um limite estreito separa a depressão da obsessão. *Gazeta do Racionalismo Cristão*, December 2003 [Link at www.racionalismocristao.org .] (See chapter 4 of this book.).

Bibliography about Appetite Suppressants and Anabolic Steroids

COUNCIL on Scientific Affairs Drug abuse in athletes. *J.A.M.A.*, v. 259, p. 1703-1705, 1988.

KURET, J. A.; MURAD, F. Adenohypophyseal Hormones and Related Substances, In: GILMAN, Alfred Goodman; RALL, Theodore W.; NIES, Alan S.; TAYLOR, Palmer. *Goldman and Gilman's the pharmacological basis of therapeutics*. 8. ed. New York: Pergamon p. 1334-1360, 1990.

LERÁRIO, A. C.; CRUZ, T. R. F.; HALPER, A.; MONTENEGRO, R. M.; NAPPO, S; CARLINI, E. A. Parecer e Recomendações do Grupo de Estudos Assessor da Secretaria de Vigilância Sanitária do Ministério da Saúde sobre Medicamentos Anorexígenos, 1993.

RANG, H. P.; DALE, M. M.; RITTER, J. M.; GARDNER P. *Pharmacology*. 3. ed. New York: Churchill Livinstone, 1995. The Reproductive system: p. 454-474.

UNDERWOOD, L. E. Report of the conference on uses and possible abuses of biosynthetic human growth hormone. *New England Journal of Medicine*, v. 311, p. 606-608, 1984.

WILSON, J. D.; GRIFFIN, J. E. The use and misuse of androgens. *Metabolism*, v. 29, p. 1278-1295, 1980.

WILSON, J. D. Androgen abuse by athletes. *Endocrinological Review*, v. 9, p. 181-199, 1988.

WILSON, J. D. Androgens. In: GILMAN, Alfred Goodman; RALL, Theodore W.; NIES, Alan S.; TAYLOR, Palmer. *Goodman and Gilman's the pharmacological basis of therapeutics*. 8. ed. New York: Pergamon p. 1413-1430, 1990.

6. The Secrets of Sleep

Sleep, both natural and induced by hypnosis or anesthesia, as well as dreams and hallucinations, cannot be explained in an understandable, rational and satisfactory way, by the common and ordinary physiological processes of the organicistic and materialistic schools. (Pinheiro Guedes. *Ciência Espírita*, p.33. Translated to English)

Although, a long period of time has been elapsed after the declaration above, by the Brazilian spiritualist doctor – Antonio Pinheiro Guedes – science, so far, with its solely materialistic view, hasn't found a rational and satisfactory explanation for the cause(s) of sleep, yet.

It is true, however, that – thanks to the modern technological resources – many things have been learned, lately, about the physiology of this phenomenon.

In the past, sleep was always seen as a testimony of a good sense of nature, so nobody wondered why do we sleep. Except by dreams, which was never seen as part of sleep, nothing appeared to occur during these empty hours and sleep looked like a mere interval to separate the “good night” and the “good morning”.

Only in the second half of the twenty-century, sleep started to be studied by, not only philosophers and poets, but also scientists.

Until the 1950s, sleep was considered a passive phenomenon. But, in 1953, the pioneers in this kind of research, Nathaniel Kleitman and his student Eugene Aseriinsky, both from the University of Chicago (USA), brought this belief definitively to the ground.

These scientists demonstrated that sleep is a dynamical activity and the brain is never completely inactive. On the contrary, during sleep the brain has an electrical activity, which complexity is similar to that observed during the vigil state (that is, when we are awake).

Sleep affects our physical and mental health in very different ways that, only now, are starting to be revealed. Chemical substances responsible for the communication of nervous cells – called neurotransmitters - acting in different groups of cerebral neurons, control our vigil and sleep states. Among the neurotransmitters involved in this process are serotonin, histamine and noradrenalin.

There are normally five different phases of sleep: phases 1, 2, 3, 4 and REM. These phases occur in cycles, initiating in phase 1 and progressing until REM phase. Then, another cycle initiate in phase 1, and so on. Phases 1 and 2 are, respectively, period of sleepiness and light sleep; and the deep sleep occurs in phases 3, 4 and REM. Generally, during one night, it happens 4 to 5 sleep cycles.

REM is the sleep phase that most intrigue neuroscientists who have made huge efforts to study it, lately. REM sleep was described in 1953 by Nathaniel Kleitman and Eugene Aseriinsky, the two investigators previously mentioned.

Eugene Aseriinsky, a simple medicine student of that time, discovered that the brain acted in a different way in one of the sleep phases. When monitoring volunteers who were sleeping, he noticed that the eyes of these people were frantically moving under the

eyelids, which means they were having a *Rapid Eye Movement*; that is why REM is used to designate this sleep phase.

After the arising of highly sophisticated techniques, much has been learnt about the physiology of sleep during the last fifty years. This brief description above is precise, however is as unsatisfactory as waking up before completing a good night of sleep. The torturing question still remains: - What does sleep do for us? This is the topic that neuroscientists are interested in revealing nowadays.

The damage of many tissues of the body that are provoked by free radicals can be treated by the replacement of damaged cells to new ones. Nevertheless, after the birth, the brain doesn't produce a significant amount of new cells. But the hippocampus – a cerebral region involved in apprenticeship and memory – is an exception, considering this aspect.

During Non-REM sleep (phases 1, 2, 3 and 4), there is an accentuated fall in cerebral metabolism and temperature. According to many investigators, this happens to give the body and the brain the opportunity to be reconstructed after the attack suffered by the free radicals during the long vigil phase.

REM sleep, however, is not explained so easily. According to some scientists, during this sleep phase, many important facts can occur, such as the development of the brain, the synthesis of neuroproteins and the coordination of eye movement.

During this sleep phase, there is an almost total paralysis of the corporal movement, but, in spite of this, there is an increase of heartbeat and arterial pressure.

The pattern of the electroencephalogram during REM sleep is very similar to that obtained during the vigil and, because of that, it is also known as paradox sleep. Many scientists even believe that the brain works harder during REM sleep than during the vigil.

REM sleep generally lasts about 11 minutes, but in the last cycles of the night it is longer, lasting about 25 minutes. REM sleep is frequently associated with the dreams, because most of them usually happen during that time.

The English essayist Aldous Huxley (1894-1963), in his book *Brave New World*, brought the possibility of learning during sleep, when listening to prerecorded texts. In exploring this hypothesis experimentally, many investigators have demonstrated that it is during the REM sleep that the fixation of memory is processed.

In 1966, one of the first theories that associate REM sleep with memory was launched. According to many authors the repetitive increase of neuronal activity in human embryos, observed in REM sleep, is associated with the growth and development of neurons. And this phenomenon continues to happen in REM sleep after the birth, during the whole life.

This concept was the reference point of the so-called dynamic stabilization. It states that information, either inherited or learnt, is remembered by the repetitive use of neural circuits where it is stored.

According to this theory, the dynamic stabilization is the spontaneous discharge of these neurons during REM sleep, and this has the same effect of memory. This theory also says that REM sleep increases the activities of neuronal circuits, which generally stay in latent state or inactive, during the vigil. In other words, facts that are apparently forgotten in our daily life are released during REM sleep, in form of dreams, in a way that we can remember in case of necessity.

According to Christian Rationalist philosophy, each spirit has recorded in his perispirit (or astral body) this and all previous lives, since the origin, and he continues to record, eternally. And the spirit, through this endless registry, after disincarnating, checks

all his past life; he meticulously analyzes it, in order to plan the next incarnation, if that is the case.

José Amorim, in his book *Energia Programada: a mecânica do perispírito* (Programmed Energy: the mechanism of the perispirit), compares our astral body to a computer, where our spirit is the operator who record all his daily acts and thoughts in the hard disk, since the first moment of his present and previous existences.

The Christian Rationalist doctrine also says: during the sleep, the spirit goes away from his physical body to his intership-planet, remaining connected with his body by means of animistic cords.

Taking all these facts into consideration, we can admit that during the many phases of REM sleep, the spirit goes back briefly to his physical body to record all his daily events that was temporarily stored in the hippocampus. In other words, he “saves” all this material in his perispirit, consolidating the memory. Therefore, the return of the spirit to his physical body makes this sleep a paradox.

One fact, already observed by scientists, may give support to this hypothesis: in the childhood and adolescence, REM sleep is much longer than in the adulthood. Maybe this enlargement of REM sleep in the children and teenagers happens because the processes of development and growth occur in a very fast way, generating a bigger amount of information to be “recorded”.

Finally, why not admit that dreams are also part of this process? In manipulating the giant hard disk of this astral computer every day, the spirit may have to organize many files that were already recorded there. This would be done through something like hard disks defrag, proceeding similarly to what is done in our periodic computer disk defrag. When doing this defrag, the contents of some files that usually belong to previous incarnations may be presented in form of dreams.

Although all these hypothetical ideas are highly speculative, maybe, in the future, they could be properly investigated. One thing, however, seems to be true: while neuroscientists don't admit that sleep and dreams are purely spiritual processes, they will not manage to find the proper answer to the question that is pursuing them, lately: *After all, why do we sleep?*

Bibliography

ALOE, F.; AMZICA, F.; HENNING, W.; MENA-BARRETO, L.; PINTO JR., L. R.; VELLUTI, R.; VERTES, R.; TIMO-IARIA. The brain decade in debate: VII. Neurobiology of sleep and dreams. *Brazilian Journal of Medical and Biological Research*, v. 34, p. 1509-1519, 2001.

AMORIM, José M. B. *Energia Programada: a mecânica do perispírito*, 4. ed. Rio de Janeiro: Centro Redentor, 1996.

BRANDÃO, M. L.; CARDOSO, S. H. Estados de Consciência. In: BRANDÃO, Marcus Lira. (Ed.). *Psicobiologia: as bases fisiológicas do comportamento*, 2. ed. São Paulo: Atheneu, p. 184-195, 2002.

GUEDES, Antônio Pinheiro. *Ciência Espírita*, 8. ed. Rio de Janeiro: Centro Redentor, 1992.

GUYTON, Arthur C. (Ed.). *Guyton Textbook of Medicine*. 6. ed. Philadelphia (PA), W. B. Saunders, 1981. Wakefulness and Sleep: p. 671-683.

KRYGER, M. H.; ROTH, T., DEMENT, W. C. (Eds.). *Principles and practice of sleep medicine*. 3. ed., Philadelphia (PA), W. B. Saunders, 2000.

PLUM, F. Disorders of sleep and arousal. In: BENNET, J.C.; PLUM, F (Eds.). *Cecil Textbook of Medicine*, 20. ed., Philadelphia (PA): W. B. Saunders, p. 1982-1985, 1996.

RACIONALISMO CRISTÃO. 36. ed. Rio de Janeiro: Centro Redentor, 1986. A encarnação do espírito: p. 81-98. A desencarnação do espírito: p. 99-116.

SIEGEL, J. M. The REM Sleep-Memory Consolidation Hypothesis. *Science*, v. 24, p. 1058-1063, November 2, 2001.

SMITH, Carlyle. Sleep States and Memory Process. *Behavioral Brain Research*, v. 69, p. 137-140, 1983.

7. The Use of the Power of Thought in Medical Clinic

The power of thought is measured by man's degree of evolution. Its limit is man's capacity to make use of his spiritual attributes. [...] Thoughts set up real environmental climates, which promote good health or disease. (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

All the time, each one of us has his or her own participation in health or disease. The word “participation” is used here to indicate the vital function that a person develops to maintain the health level. Most of the people think that the cure is something that is given to them and that the only thing they need to do when they have a health problem, is go to the doctor to have their problem resolved. This is partially true, but only partially.

All of us participate in our health through our convictions, our feelings and our attitudes related to life. So, our response to any treatment depends on believing in its efficiency and, also, trusting the medical team responsible for it.

An efficient treatment program has to deal with the human being as a whole, not only focusing on the disease. If the integrated system of mind (spirit), physical body and emotions (mental reactions), which constitutes the whole person is not working together towards healthiness, then purely physical interventions may not succeed.

When the cure of a disease occurs without having a physical intervention, the doctors say that the cure is spontaneous. The word “spontaneous”, in this case, hides the ignorance of the today's medical class, in the same way that the expression “spontaneous generation” hid the ignorance of these same professionals in the Middle Age.

This exclusion of convictions and feelings of medical practice, besides not having scientific foundation, doesn't take into consideration that many doctors consider the placebo as one of the most powerful drugs.

Louis Lasagna (1923-2003) was the scientist who created the methodology to evaluate the effects of drugs. He was a pioneer in the area of clinical pharmacology, the science that studies this topic. Lasagna made history, publishing in 1954 the first scientific article that documented what he called “the placebo effect” in patients.

Because of his ideas, this scientist was known as Sigmund Freud of clinical pharmacology. The description of the placebo effect made by Lasagna was such a memorable scientific fact that the respectful English medical magazine *The Lancet* included it among the 27 most important medical knowledge conquered since Hippocrates, in 400 B.C.

In 1962, Food and Drug Administration (FDA), the regarded American federal agency, responsible for the control of medicaments and food, adopted the standards recommended by Lasagna. Since then, all trials done by FDA had to be a Control group, where the placebo was administrated. The entire science was also affected by the discovery of Lasagna, because the presence of a Control group had to be demanded, also, in all scientific data, experimentally obtained.

The term “placebo” (Latin, “I will please”) entered in the English language at the beginning of XIX century. Placebo was the name given to all drugs prescribed to patients rather to please than to benefit them.

Although, clinical doctors always intend to hide the fact, most of them have the habit to use placebos. Now, we will cite some examples of this.

- ✓ The common and condemnable practice used by most of the doctors to prescribe antibiotics for cold or flu, even being aware of their inefficiency.
- ✓ The practice of prescribing unnecessary polivitaminics, justifying that this will strengthen their patients.
- ✓ The use of sugar or starch pills practiced in some hospitals and clinics to help, for example, a patient to sleep.
- ✓ The prescription of placebo for a chronic patient with imaginary disease.
- ✓ The use of placebo when a proper treatment for certain disease is not available, yet, etc., etc.

Therefore, the only active ingredient of treatment with placebo seems to be the power of conviction that patients have in receiving a useful treatment. In brief, the way a patient feels and acts regarding his doctor, the trust given to him and the drugs he has prescribed (in other words, the power of thought) are the responsible agents for the cure. So, the power of positive thought of a patient turns the placebo a powerful drug.

But, after all, why do these doctors act like this? This is done so the patients don't feel abandoned, but supported and cared by their doctors. Therefore, the reason of this attitude is to create doctor-patient empathy, which is very important.

Most of these professionals don't even worry about knowing what the explanation of placebo effect is. Some of them simply ignore it, saying, many times disdainfully, that the disease is psychosomatic... According to them, everything is product of the patients' imagination, so it cannot be considered as a real disease.

There is there a distortion of the meaning of the word “psychosomatic”, which is applied to a disease originated or aggravated by psychological process of an individual. It doesn't absolutely means that the disease is less real. So, a gastric ulcer can be emerged as a result of anxiety and tension, but this doesn't make it less real.

Due to the materialism predominating in the medical class in general, these same professionals, capable to consciously use the placebo effect to benefit their patients, deny to accept that the spontaneous cure of a disease can be done by the patients themselves. In order to happen, they just need to activate the power of thought, because, as all Christian Rationalists know, thought represents a motive force with a prodigious capacity to defeat obstacles. It can be read in the essential book of the doctrine (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>) that: “The history of medicine records innumerable instances of serious diseases and their cures. These were considered by many as miraculous, but were due simply to the spiritual reactions of the diseased themselves and to their attraction of Superior Forces.” But, it can be read in the same book: “Thought can be cultivated, refined and strengthened by the use of conscious will power.”

These are the properties of thought, known by Christian Rationalists for a long time, that have been explored by psychologists and clinical doctors, who are followers of

psychosomatic medicine (unfortunately, a minority among clinics) in a new technique called *biofeedback*, or, in other words, “biological retro-alimentation”.

Today, biofeedback is considered, not only a technique, but also a new area of science. It was developed in the 60s of the XX century by the psychologist couple Alyce and Elmer Green.

In their experiments, these two scientists showed that people can be trained to *control* physiological phenomena, such as the speed of the heartbeat, the muscular tension, the activities of the sweat glands, the temperature of the skin, etc. Thus, they were the ones who demonstrated, for the first time, that all the variety of physiological phenomena that happen in spite of our intention (involuntarily), and that are normally controlled by the autonomous nervous system, *could be voluntarily controlled by the persons themselves*.

The technique used to learn this control is very simple: electrodes are placed in the skin of the person that is being trained so the biofeedback equipment is able to monitor the involuntary physiological functions. This equipment emits sonorous and/or visual signals that point out what is happening with these functions.

Exemplifying: if a person is learning to control his heartbeat, a sound is used as a signal; it sounds louder when the heartbeat increases and sounds softer when it decreases. After certain time, the person realizes that some thoughts, sensations or physical postures are capable of inducing modifications in his or her heartbeat. At the end of this training, the person learns how to exercise a conscious control over a particular involuntary or autonomous physiological function.

The spirit is the captain of our physical body and transmits orders to it through thought. Therefore, both the sensations and the physical postures, referred above, are also directly dependent of thought. We could say that biofeedback is nothing more than a clinical application of the power of thought.

Dr. Barbara Brown (1975, p. 45), another pioneer of biofeedback’s researches, declared that the researches made by biofeedback are the first indications - medically tested - that mind can eliminate diseases, just like it creates them.

Finally, we could say that, in this chapter, we demonstrated, once again, the narrow connection between the teachings of the Christian Rationalist doctrine and science.

Bibliography

BOURNE, H. Unrecognized therapeutic measures, including placebo. In: MELMON, K. L.; MORRELI, H. F. (Eds.). *Clinical Pharmacology*. New York: Macmillan, 1991.

BROWN, B. *New Mind, New Body*. New York: Harper & Row, 1975.

GOLEMAN, D. *A Inteligência Emocional*. 74. ed. Rio de Janeiro: Objetiva, 1995.

GREEN, E.; GREEN, A. *Beyond Feedback*. New York: Delacorte, 1977.

GREEN, E. E.; GREEN, A. M.; WALTERS, E. D. Voluntary Control of Internal States: psychological and physiological. *Journal of Transpersonal Psychology*, v. 2, p 1-26, 1970.

HARRINGTON, A. (Ed.). *The Placebo Effect: an interdisciplinary exploration*. Cambridge, MA: Harvard University Press, 1977.

HRÓBJARTSSON, A. The uncontrollable placebo effect. *European Journal of Clinical Pharmacology*, v. 50, p. 345-348, 1996.

KIENLE, G. S.; KIENE, H. The powerful placebo effect: Fact or fiction? *Journal of Clinical Epidemiology* v. 50, p. 1311-1318, 1997.

LASAGNA, L. The placebo effect. *Journal of Allergy and Clinical Immunology*, v. 78, p. 161-165, 1956.

RACIONALISMO CRISTÃO. 36. ed. Rio de Janeiro: Centro Redentor, 1986. O pensamento: p. 119-124.

RANG, H. P.; DALE, M. M.; RITTER, J. M.; GARDNER, P. *Pharmacology*. 3. ed. New York: Churchill Livingstone, 1995. How drugs act: general principles, p 3-6.

ROBERTS, A. H.; KEWMAN, D. G.; MERCIER, L.; HOVELL, M. The power of nonspecific effects in healing: Implications for psychosocial and biological treatments. *Clinical Psychology Review* v. 13, p 375-391, 1993.

SAMEL, Caruso. *Reflexões sobre os Sentimentos*. 3. ed. Rio de Janeiro: Centro Redentor, 2003. O Pensamento: p 310-314.

SOUZA, Luiz de. *Ao Encontro de uma Nova Era*. 4. ed. Rio de Janeiro: Centro Redentor, 1977. O Poder do Pensamento: p 27-35.

SPIRO, H. *The Power of Hope: a doctor's perspective*. New Haven, CT: Yale University Press, p 278, 1998.

8. The Polemic Return of the Psychosurgeries

Having established, together with my partner Luiz Alves Thomaz, two hospitals to cure crazy people, which existed until 1916, one in Santos [...] and other in Rio de Janeiro [...], even the most skeptic people became convinced that obsession could only be cured using the method and discipline advised by the Redeemer Center. (Luiz de Mattos, *Cartas Oportunas sobre o Espiritismo*, 1930, p. 37. Translated to English)

The involvement of frontal lobe in the emotions has been already known since the last years of XIX century. This knowledge is a result of clinical observations, when this part of the brain is destroyed by accidents or tumors, and also through experiments using laboratory animals, when this lobe is damaged or removed. In that time, the advent of anesthesia and asepsis and the progress of surgery techniques stimulated the accomplishment of procedures in the brain, as it had never been tried before. So, many pioneers was attracted to neurosurgery, such as Sir Victor Horsley, from United Kingdom, Harvey Cushing, from United States, and Antonio Egas Muniz, from Portugal.

Within this context, Egas Muniz, a neuropsychiatrist and professor of Faculty of Medicine of the University of Lisbon, proposed, in 1935, for the first time, the surgery treatment for mental diseases. This treatment was known as psycho-neuro surgery or, simply, psychosurgery.

The theoretical basis for this Egas Muniz's proposal was an experimental finding that had been obtained few years earlier in chimpanzees, where certain neurotic symptoms, artificially induced in these animals, tended to decrease when the nerve bundles, connecting the frontal lobe to the rest of the body, were selected. He called this technique as lobotomy or leucotomy, because the surgery instrument used to accomplish this is called leucotome. The first surgery of this kind was done in 1936 by Almeida Lima, under the supervision of Egas Muniz.

During that time, the results obtained with lobotomy to control psychoses, violent tempers and severe depressions were considered so good, that in a short time this procedure was adopted in many countries, and mainly used in patients of clinics and psychiatric hospitals. It is for that reason that, in 1949, Egas Muniz received the Nobel Prize of Medicine.

Since it was adopted, lobotomy has passed through periods of euphoria and others of intense rejection by both medical class and society. This was one of the few medical practices that went from the top – with even a Nobel Prize – to a total distrust, in a 20 years time or so.

Whoever went through this process or watched movies, such as *One Flew over the Cuckoo's Nest* and *A Clockwork Orange* understands very well the reason of this fall. In the first movie, Jack Nicholson became a real zombie after being submitted to a lobotomy to control his temper, which were considered problematic. And, in the second one, a scientific fiction movie, there is a scene inspired on the psychosurgery, where the actor Malcon McDowell is shown in a procedure of cerebral control.

After the 1950s, lobotomy and other forms of leucotomy were abandoned, because new drugs to control anxiety, depression and psychosis emerged, and also because of the incapacity sequels and the abusive use of this technique.

But, when that happened, lobotomy had already made many victims, because during a 10 years period, more than 50,000 people all over the world had been submitted to it. Some of these victims were well known personalities, like the French actress Farmer. Many times, lobotomy was done in a totally arbitrary way in problematic children, rebel teenagers, and even political opponents.

Nowadays, the most accepted conventional therapeutic orientation for psychiatric disease involves a combination of psychotherapy, drugs, and, in some instances, electroconvulsive therapy (this therapy is not innocuous either, because it usually creates sequels).

Many patients, however, don't properly respond to this procedure and remain severely incapacitated. And it is in these kinds of patients, called "resistant" or "refractory" by psychiatrics, that psychosurgery is being proposed as an alternative to conventional treatment.

So, around 50 years, after lobotomy fell into disuse, psychosurgeries turned over to be considered a valid therapeutic option for psychiatry.

This option is not yet a consensus among neurosurgeons and psychiatrists, but most of them have been favorable to this idea. Psychologists are the strongest opponents of this idea, but in many countries, such as United States and England, the procedure is already regulated and done in universities like Harvard and Brown.

In Brazil, psychosurgery is already being done in Goiania and Rio de Janeiro and it is even being noticed by the important Hospital das Clinicas of Sao Paulo, which is considered a draining hospital because it receives patients from all over the Brazilian territory. At this moment, there are already two independent groups in this hospital trying to implement this routine.

Now, what is proposed is a much less invasive procedure – the so-called stereotactic and functional neurosurgery. Because of this, and supported by modern techniques of cerebral mapping, surgeons make millimetric holes in the skull, introducing radiofrequency emitter electrodes that destroy small regions of the brain by heating. Another version of this technique is the radio surgery by *gamma knife*, which concentrates 201 gamma ray beams in the spot to be destroyed. In this last technique, it is not even necessary to open the skull of the patient.

These small surgery lesions have been used to control, for example, violent behavior caused by intracranial tumors, epileptic focus located in the "emotional" region of the brain, unmotivated chronic aggressiveness and chronic anxiety. According to neurosurgeons, they don't significantly affect the intellect and emotions of patients.

Nevertheless, despite all this technical refinement that is now proposed, one thing hasn't changed: the polemic that psychiatric surgeries could be used either to control the behavior or to cause irreversible damages still exists. And this control seems to be justified, because the huge scientific development occurred in the behavior studies have contributed a lot for the enthusiastic use of these surgeries by doctors.

In Brazil, the Ministry of Health is against psychosurgery, asserting that there are still not enough scientific evidences to authorize a procedure like that, which, according to recent statistical data, involves risks to the patient.

Although the professionals of this area say that they are careful, the fear that these surgeries may be done without proper criteria and respect for the human being still remains, inside and outside the scientific community.

The Federal Council of Medicine, has emitted many resolutions of this kind, however it has left many gaps in them, because of the ambiguous texts of these resolutions. So, this polemic will only disappear when a federal law regulating or prohibiting this practice is created.

After many mental diseases that, according to these professionals, could be successfully treated with surgery, their attention is now turned to the surgery treatment of obsessive-compulsive disorder (also known by the abbreviation OCD). As a matter of fact, this behavior exists not only in Brazil, but also in other countries.

The obsessive-compulsive disorder is one of mental diseases that has most challenged science and, lately, many investigations have been dedicated to it. The occurrence of this pathology in the population is very frequent and, consequently, its surgery treatment can produce high profits to neurosurgeons and psychiatrics.

In the description made for its disorder, it can be observed many characteristics described in the essential book, Christian Rationalism, chapter “Obsession”, disturb which symptoms the students from the doctrine know very well.

Depression is one of the symptoms present in the patients with obsessive-compulsive disorder and, when it is very intense, the suicide level is high. For psychiatrists, this is the kind of patient to be indicated for psychosurgery, because, according to these professionals, they are generally resistant to the conventional treatment.

The surgery treatment of obsessive-compulsive disorder was proposed with the support of a discovery made by neuroscientists. They have detected alterations in the internal capsule and the anterior cingulum – two regions of the emotional brain - in patients with this mental disease. However, it hasn't been possible, yet, to determinate if such alterations are the *cause* or *consequence* of this mental disturb. But, anyways, this psychosurgery is still being done...

Among medical specialties, surgery is the procedure that concentrates most of the materialistic professionals. Surgeons generally don't have contact with the patients, while they are lucid, because they only see them already anesthetized in the surgery table. What they are really interested in is the physical body that will be, for some time, the stage where they – the big heroes – will act demonstrating their technique.

The term “mind” is synonymous of “spirit”, “soul”. Thus, mental diseases are spiritual diseases. So, what could these professionals know about mental diseases if only matter exists for them?

And now, by not knowing this, psychiatrists want to have a new income source submitting patients with obsessive-compulsive disorder to surgeries – actually, a multitude of unfortunate people overwhelmed by the inferior astral.

But, for these professionals, the word spirit remembers spiritism, something that, because of their haughtiness, as owner of truth, they disdain, by not considering it scientific.

By knowing the way of thinking of these pseudo scientists, the founder of Christian Rationalist doctrine – Master Luiz de Mattos – said, in the 1930s:

Because of the prejudices, Spiritualism, as Science, has been denied and denigrated, and, therefore, maintained in the hands of charlatans and superstitious. It should be

studied by everybody and, above all, by the man of science. (Pela Verdade, 1983, p.250. Translated to English)

And, to finish this chapter, we will transcribe the words that Dr. Antonio Pinheiro Guedes addressed to his medical colleagues, in his book *Spiritualist Science* (available at <http://www.christian-rationalism.org/ebooks/spiritualistic-science.pdf>):

To the physicians, I will say that spiritualism is not a grave but rather a cradle in which the divine art of cure was first rocked. It is not death. It gives life instead. Rather than populate hospitals of the mentally ill, it opens its doors for them to leave such dungeons, such houses of torture, such holes of horror to which some ill-fated people were pushed by the hand of the materialistic medicine.

Bibliography

BAER, L; RAUCH, SL; BALLANTINE, T; MARTUZA, R; COSGROVE, R; CASSEM, E; GIRIUNAS, I; MANZO, P.A.; DIMINO, C; JANIKE, M.A. Cingulotomy for intractable obsessivecompulsive disorder - prospective long-term follow-up of 18 patients. *Archives of General Psychiatry*, v. 52, p. 384-92, 1995.

BRIDGES, P.K.; GOKTEPE, E.O.; MARATOS, J. A comparative review of patients with obsessional neurosis and with depression treated by psychosurgery. *British Journal of Psychiatry*, v. 123, p. 663-74, 1973.

COLAVITTI, F; GIRANDI, G. A Herança da Lobotomia. *Galileu*, p. 71-77, February, 2004.

FODSTAT, H; STRANDMAN, E; KARLSSON, B; WEST, K.A. Treatment of chronic obsessive compulsive states with stereotactic anterior capsulotomy or cingulotomy. *Acta Neurochirurgica*, v. 62, p. 1-23, 1982.

JENIKE, M.A.; RAUCH, S.L. Managing the patient with treatment-resistant obsessive compulsive disorder: current strategies. *Journal of Clinical Psychiatry*, v. 55, p. 11-17, 1994.

MATTOS, Luiz de. *Pela verdade: a ação do espírito sobre a matéria*. 9. ed. Rio de Janeiro: Centro Redentor, 1983.

MATTOS, Luiz de. *Cartas oportunas sobre o espiritismo*. 12. ed. Rio de Janeiro: Centro Redentor, 1984.

MINISTÉRIO DA SAÚDE DO BRASIL: Formação de Grupo Técnico para Controlar Realizações de Psicocirurgias. *Revista Phoenix Comunicação Integrada*, 2003. In: <http://www.editoraphoenix.com.br>.

MONIZ, E. *Tentatives operatoires dans le traitement de certaines psychoses*. Paris: Masson, 1936.

PERSE, T. Obsessive-compulsive disorder: a treatment review. *Journal of Clinical Psychiatry*, v. 49, p. 48-55, 1988.

PINHEIRO GUEDES, A. *Ciência espírita*. 8. ed. Rio de Janeiro: Centro Redentor, 1992.

RACIONALISMO CRISTÃO. 36. ed. Rio de Janeiro: Centro Redentor, 1986. A obsessão: p. 194-202. A desobsessão: p. 205-207.

SABATTINI, Renato M.E. The History of Psychosurgery. *Brain & Mind Magazine*, 1(2), June-August, 1997. In: <http://www.cerebromente.org.br>.

SILVA, Glaci Ribeiro da. Um limite estreito separa a obsessão da depressão. *Gazeta do Racionalismo Cristão*. In: <http://www.racionalismocriatao.org> (Ver cap. 4, deste livro).

SPIEGEL, E.A.; WYCIS, H.T.; MARKS, M; LEE, A.J. Stereotaxic apparatus for operations on the human brain. *Science*, v. 106, p. 349-50, 1947.

9. The Prescriptions of Christian Rationalism and the Current Medical Science^{*}

The finality of Christian Rationalism is neither to cure bodies nor physical diseases, but to enlighten souls, to prepare the human being to fight for his life, showing him the path to the truth.

The formulas described here, with their proper indications, prescribed and revised by the doctor Joao Baptista Cottas, are destined to only those places without doctors, consultation rooms or hospitals. (Practice of Christian Rationalism, 1960, p. 108, Translated to English)

The human being has always obtained all the necessary to calm his pains and to cure his diseases from nature. Using plants as medicine is, probably, as old as the existence of human being on Earth. So, for example, the therapeutic use of *Ginkgo biloba* leaf extracts can be traced back for centuries in traditional Chinese medicine.

Ginkgo is native from Korea, China and Japan, but can also be found in parks and along city sidewalks around the world. Ginkgo fossils have been dated as far back as 250 millions years, and Charles Darwin referred to the tree as “a living fossil”.

In the antiquity, there were no conflicts between medicine and medicinal plants (also called herbs). It is very known the fact that Hippocrates – the father of medicine – had prescribed herbs to his patients. But, after the XVII century, this practice started to be considered criminal. This fact was a great loss for the humanity, because for centuries very important knowledge has been buried in forgetfulness.

The term “phytotherapy” (from Greek, *phyton*, “vegetal” and *therapeia*, “treatment”) was created to designate popular traditions of treatment, where medicinal plants are used as medicines.

Data from the World Health Organization (WHO) show that around 80% of the world population use some kind of plant, seeking the relief of any painful or unpleasant symptom. And, at least 30% of this total is given by medical prescription.

Nevertheless, as consequence of the technological jump occurred in the pharmaceutical industry, in the 1950s and 1960s, the therapeutic use of medicinal plants has become more and more restricted against the non-expert approach.

The WHO defines “medicinal plant” as the plant that has in one or many of its organs (leaf, fruit, seed, root, etc.) substances used for therapeutic purpose; these substances are called as “active principle”, because they are the responsible for the therapeutic effect the plant produces.

The plant that contains substances that can be used as the starting point to the synthesis of chemical and pharmaceuticals products is also considered as medicinal plant. In this case, the therapeutic effect of the plant will only be present in the drug fabricated by the pharmaceutical industry, not in the plant itself.

^{*} In order to write this chapter, I counted with the support of two friends from Christian Rationalism: Dennis Resmini and Fernando Fidalgo. Thanks to Dennis for the willingness and promptness in answering my request, sending me copies of the formulas of Christian Rationalism. Thanks to Fernando for the enthusiasm for my idea and for the incentive he gave me to execute it.

Many drugs that are routinely used in medical clinic are originated from substances found in plants that are extracted and manipulated by the pharmaceutical industry. Good examples of this are the aspirin, atropine, digitoxin, morphine, quinine and even some chemotherapy drugs used to fight cancer, such as vinblastine and vincristine.

In the last years, medicinal plants have become a huge and lucrative commerce. The estimative says that at least one third of Americans have already tried phytotherapy drugs, spending at least three billion dollars per year. And, in many European countries, the use of herbs is an old tradition that has been preserved.

Therefore, that is the reason why parts of the Brazilian territory, such as the Amazon forest, the Atlantic forest, and the cerrado, have been invaded, lately, by plant collectors, which are people coming from many countries, and especially by the ones who have the most powerful pharmaceutical industries.

These collectors infiltrate into the local population and learn with them how to identify the medicinal plants from there. So, in Brazil, it has been taken off, under the complacent look of the authorities, the inestimable treasures of the flora. And, to complete this robbery, the international pharmaceutical industries have patented many Brazilian plants, guaranteeing the exclusivity of their use.

The major difficulty in phytotherapy is the scarcity of systematic studies about the efficacy of herbs. To prove this efficacy, two lines of research can be used:

- ✓ The extraction of active principles of herb;
- ✓ The use of herb as a whole.

The extraction of the active principles of a plant is a multidisciplinary and very expensive job. It involves many scientists, such as chemicals, agronomists, biologists, pharmacologists, etc. The equipments used are also very sophisticated. Because of these limiting factors, the isolation of the active principles of plants is almost exclusively done by the biggest pharmaceutical industries.

But using an herb as a whole also presents problems. The main problem is the variation of the intensity of the desired effects. This variation is a result of the content of the active principle of a plant. Many studies have shown that this variability is huge (from 0 to 100%). It happens because of many reasons, such as the season when this plant is gathered, the kind of land, the occasional climatic variation, the care during the storage, etc.

Another big problem is the toxic plant, which is generally mistaken for the medicinal plant by inexperienced people.

When herbs are sold in the free market or in some establishments, they might be contaminated by agro-toxics and also by fungus and bacteria. In a recent study, it was evaluated some teas and capsules collected in a street market, in three prescription pharmacy and in one big representative located in Sao Paulo city, Brazil.

This study, done between August 2000 and July 2001, evaluated 50 samples of *senna alexandrina* (*Cassia angustifolia*), *boldo* (*Peumus boldus*), *espinheira santa* (*Maytenus ilicifolia*), *sacred bark* (*Rhamnus purshiana*) and *Artichoke* (*Cynara cardunculus*), used for therapeutic reasons. The plants sold in the street market were in precarious condition, and registered the highest amount of harmful microorganisms. These products are stored in opened plastic bags and are exposed everyday to the pollution, heat and humidity.

Usually, it doesn't help to wash and boil plants, because this could destroy the microorganisms but not the toxins they produce. These toxins are generally deposited on the leaves and are frequently thermostable. Depending on the frequency of ingestion, these toxins may cause from simple gastrointestinal disorders and breath allergies to more serious damages to the organism, such as hepatic lesion, for example.

The samples with the most favorable evaluation in this study were the ones from the sterilized products that were collected in the representative, where the storage conditions were very favorable. The fastest way out that Brazil and other countries without financial resources found to solve health problems was to recover the popular medicine. For this reason, and with the support of the WHO, the use of medicinal plants reemerged in the 1980s much more powerful and vigorous.

In 1982, it was implanted in Brazil by CEME - *Central de Medicamentos* (Drugs Center) - a program of the Federal Government that aimed to research on popular plants, possible active substances, which are useful to prepare drugs.

Because Brazil has a vast geographical area where these herbs are native, this program would also enable a decrease of their costs.

In that occasion, it was created in CEME, a technical commission who took upon itself to organize this research program. Initially, this commission distributed the first 21 plants in groups that were formed according to the popular use of them. For example: it had a group of analgesic, antipyretic, anti-inflammatory and antispasmodic herbs; another group of sedative, anxiolytic, hypnotic plants, etc., etc.

To avoid mistakes of giving the same name to different plants or different names to the same plant, the next step would be to properly denominate these herbs by their botanical classification, that is, by their Latin names. After that, they would be studied by different researchers who would verify if these plants really cure diseases, as the same way the popular medicine proclaims it; they would watch their collateral effects and their toxicity in order to dosages and forms.

Conventional drugs should demonstrate that they are secure and efficient before being commercialized. This is done through tests, first in laboratory animals and later in humans.

Until recently, the major criticism made of phytotherapeutic drugs by the official science was the fact they were used without proper regulation to control them. But, in February 2000, a very important step was taken by Anvisa - *Agência Nacional de Vigilância Sanitária* (National Agency of Sanitary Vigilance), regulating, through a governmental directive, the compulsory registration of these drugs in Brazil. After this date, buying a phytotherapeutic drug in Brazil has become much more secure, because, in the packaging of the products, it has to be recorded the number of Anvisa registration and also their expiration date.

The main objective of this chapter is to analyze, in the light of the recent knowledge, the so-called "Prescriptions or Formulary of Christian Rationalism". It is composed by domestic formulas based on herbs that were recommended by the Superior Astral to the treatment of many pathologies. The detailed description of these formulas can be found in some old editions of the books *Practice of Christian Rationalism* and *Communications and Doctrinal Letters*, in Portuguese.

These prescriptions were used during many years by the students of Christian Rationalism, who aimed to alleviate their diseases, following the orientation contained in them. However, starting from the ninth edition of the book *Practice of Christian*

Rationalism, in 1991, these “prescriptions” were substituted by generic information titled as “Medicinal plants, their properties and their use”. But, although these formulas were officially suppressed from the books of the doctrine in 1981, they are still occasionally used by the “Christian Rationalists since infancy”, which means, by those who, like us, were grown within the Christian Rationalist routine.

In this chapter, we are going to show the results of the revision we made in the international scientific literature about the works that have been published regarding some herbs that are used in these formulas.

The following herbs were located: elderberry, bristly starbur, althea, guaco and blue porterweed.

1. The elderberry (*Sambucus nigra*) is used in many prescription formulas, generally in form of tea (or aqueous infusion). The parts of the plant used are the flowers. This tea was recommended for catarrh infections of the respiratory tracts, for colds and flues with or without fever, and also, for measles. It is considered a powerful anti-flu and anti-thermal product.

We found in the literature two recent works published by Israeli scientists about an active principle, extracted from the elderberry, called sambucol. The first work was done by a team of the Department of Virology, Hebrew University-Hadassah Medical School, in Israel. In this work, Zakay-Rones and his cooperators verified that sambucol, when added to the culture of type A and B flu viruses, was capable to inhibit their growth. Based on this, these authors administrated sambucol to a community living in a “kibutz” with an epidemic type B flu. It was verified that patients treated with sambucol were healed 2 or 3 days after the beginning of this treatment, against 6 days needed to heal the control-patients (without sambucol).

The second work (Barak et al., 2002) was developed by a team of immunologists. In this work, the authors showed that the flu induced by the sambucol is due to the stimulation this substance produces of the immune system. This happens not only with patients with flu, but also in immune-depressed patients, because of cancer, AIDS, and in the immune-depression caused by chemotherapy drugs.

2. The bristly starbur (*Acanthospermum hispidum*) is mentioned in the prescriptions under the form of tea and aqueous extract; as a tea, it is recommended for diseases of the urinary tract; and, as an aqueous extract – usually mixed with other herbs – its recommendation is very wide (diuretics, helping in the digestion, sedative).

Many researches have been done with this plant. They have been basically addressed to the anti-thermal, antimicrobial and antimalarial effects of this plant.

The alcoholic extract of the leaves and flowers of bristly starbur is a powerful antibacterial (Fleischer et al., 2003). This activity is not found in the aqueous extract of this plant.

The raw extract of bristly starbur has anti-fever and antimalarial properties. (Carvalho and Kretti, 1991).

3. The althea root (*Althaea officinalis*) is used, jointly with other herbs, in the formula of many aqueous extracts. The recommendation for its use is also very variable.

According to some authors (Nosal’Ova et al., 1992), the althea extracts are antitussive (they inhibit the cough).

During the 1960s, it was isolated one steroid from the althea (Huriez and Fages, 1968) that, associated with dexamethasone, has been experimentally used in the topic treatment of psoriasis and several types of dermatitis. Many researches have been developed, lately, about this steroid. They are mainly done in the pharmaceutical industry, that's why the scientific articles about this have little information.

4. The use of guaco leaves (*Mikania cordata*; *Mikania cordifolia*) is recommended, in form of tea, for colds and for many pathologies of the upper respiratory tract, such as hoarseness, tonsillitis and bronchitis. It is also part of the composition of many aqueous extracts.

The guaco is a plant that has been studied a lot by scientists. Many active principles have been extracted from it. These active principles produce a great variety of therapeutic effects, such as: anti-inflammatory (Peluso, 1995), antimicrobial (Davino, 1989), anti-carcinogenic (Bishayee and Chatterjee, 1994), gastric mucosa protectors (Bishayee and Chatterjee, 1994), etc.

5. The blue porterweed tea (*Stachytarpheta cayennensis*) is recommended for liver and stomach diseases. It is also part of many aqueous extracts.

Many chemical substances have also been extracted from the blue porterweed. In laboratory animals, it has already been demonstrated its germicidal and larvicidal properties (Robinson, 1990), anti-inflammatory properties (Shapoval, 1998), gastric secretion inhibition properties (Vela, 1997) and anti-diarrhea properties (Almeida, 1995).

In the sample of plants analyzed in this chapter, not always the therapeutic indications recommended in the "Prescriptions" for certain plant match with the ones demonstrated by scientists.

There are many reasons for this variability. This can be related, for example, to the great number of active principles of these medicinal plants. This number is usually higher than 30, and could reach, in some cases, more than 200. These chemical substances add their actions, determining the effect of the medicinal plant. They can also be combined in many different ways, resulting in specific actions. That is one of the reasons that one plant has many therapeutic actions. However it is not the unique. Other reasons for this variation of effects are the part of the plant that is used and the way it is prepared: infusion, aqueous extract, alcoholic extract, etc.

The study of medicinal plants is a line of research that exists in almost all Brazilian universities. Most of them have websites about this topic on the Internet. In the bibliography of this chapter, there are some addresses of these websites; they include information about other medicinal plants, in Portuguese.

The physical body is a sophisticated machine that was conceived by the Universal Intelligence in order to provide to the machinist – the spirit – the opportunity of using it during its evolutionary trajectory in the Earth Planet. The longer is the incarnation, the higher is the opportunity for the spirit to learn and evolve. Therefore, it is important to us to have the maximum zeal with our physical body, avoid getting sick and/or take care of it when it happens.

All the drugs have adverse collateral effects, but their existence is unknown to most of the patients who use them. Besides, most of the information the doctors receive about a drug comes from the pharmaceutical industries that sell it. And they are obviously

interested in promoting virtues and hiding defects. As a result of this ignorance, nearly 40% of patients who receive a prescription suffer light, severe and even lethal collateral effects. In other words, these patients develop an *iatrogenic disease* (from Greek *iatros*, “doctor”, “medical science”, “treatment”, “medicine”).

Although the term *iatros* has a lot of meanings, in *lato sensu*, iatrogenic diseases are the ones produced by the improper use of a drug. And the main cause of the world epidemic of iatrogenic diseases that exist nowadays is the greediness of the big pharmaceutical industries. They make fortune manufacturing and selling drugs, with a huge margin of profit.

Alternative therapies, such as phytotherapy, can be a good option to escape from the unscrupulous claws of these industries. Logically, the discernment should be used and, in more serious cases, this has to be done under the supervision of a good physician.

Bibliography

ALMEIDA, C.E.. Analysis of anti-diarrheic effect of plants used in popular medicine. *Revista Saúde Pública*, v. 29 p. 428-433, 1995.

BARAK, V; BIRKENFELD, S; HALPERIN, T; KALICKMAN, I. The effect of herbal remedies on the production of human inflammatory and anti-inflammatory cytokines. *Israel Medical Association*, v. 4, p. 994-996, 2002.

BISHAYEE, A; CHATTERJEE, M. Protective effects of *Mikania cordata* root extract against physical and chemical factors-induced gastric erosions in experimental animals. *Planta Medicine*, v. 60, p. 110-113, 1994.

CARVALHO, L.H; KRETTI, A.U. Antimalarial chemotherapy with natural products and chemical defined molecules. *Memórias do Instituto Oswaldo Cruz*, v. 86, p. 181-184, 1991.

COLEMAN, Vernon. Medicina Faz Mal à Saúde. *Superinteressante*, p. 88-89, February, 2004.

COMUNICAÇÕES e cartas doutrinárias. 2. ed. Rio de Janeiro: Centro Redentor, 1936, p. 378-401.

FLEISHER, T.C.; AMEADE, E.P.; SAWER, I.K. Antimicrobial activity os the leaves and flowering tops of *Acanthospermum hispidum*. *Fitoterapia*, v. 74, p. 130-132, 2003.

HURIEZ, C.; FAGEZ, C. On the association of althea and dexamethasone: dexalta oitment. *Lille Medicine*, v. 13, p. 121-123, 1968.

MCKHANN, G.M.; ALBERT, M. *Cérebro Jovem*. 2. ed. São Paulo: Campus, 2003. Nutrição para o Cérebro, p. 26-41.

NOSAL'OVA, G; STRPKOVA, A; KARDOSOVA, A; KAPEC, P; ZATHURECKY, L; BUKOVSKA, E. Antitussive action of extracts and polysaccharides of marsh mallow (*Althea officinalis*). *Pharmazie*, v. 47, p. 224-226, 1992.

PRÁTICA do Racionalismo Cristão. 2. ed. Rio de Janeiro: Centro Redentor, 1961. Formulário: p. 108-132.

ROBINSON, R.D. Inactivation of *Strongyloides stercoralis* filariform larvae in vitro by six Jamaican plant extracts and three commercial anthelmintics. *West Indian Medical Journal*, v. 39, p. 213-217, 1990.

SCHAPOVAL, E.E. Anti-inflammatory and anti-noceptive activities of extracts and isolated compounds from *Stachytarpheta cayennensis*. *Journal of Ethnopharmacology*, v. 60, p. 53-59, 1998.

SCHAPOVAL, E.E.; VARGAS, M.R.; CHAVES, C.G.; BRIDI, R.; ZUANAZZI, J.Á.; HENRIQUES, A.T. Anti-inflammatory and anti-noceptive activities of extracts and isolated compounds from *Stachytarpheta cayennensis*. *Journal of Ethnopharmacology*, v. 60, p. 53-59, 1998.

VELA, S.M. Inhibition of gastric secretion by the aqueous extract and purified extracts of *Stachytarpheta cayennensis*. *Planta Medicine*, v. 63 p. 36-39, 1997.

ZAKAY-RONES, Z; VARSANO, N; ZLOTNIK, M; MANOR, O; REGEV, L; SCHLESINGER, M; MUNCUOGLU, M. Inhibition of several strains of influenza virus in vitro and reduction of symptoms by na elderberry extract (*Sambucus nigra* L.) during an outbreak of influenza B/Panama. *Journal of Alternative Complement Medicine*, v. 1, p. 361-369, 1995.

Internet web sites

Universidade Federal da Bahia

<http://www.faced.ufba.br/~dacn/planta.htm>

Universidade de Campinas (UNICAMP)

<http://www.cpqba.unicamp.br/plmed/sobre.htm>

Universidade de Sao Paulo (USP)

<http://www.ciagri.usp.br/planmedi/planger.htm>

Università Degli Studi di Padova

<http://www.dfem.unipd.it/default.htm>

Università Degli Studi di Padova (Library)

<http://www.dfem.unipd.it/BibliotecaA.htm>

List of several plants

<http://www.dfem.unipd.it/Farmacognosia/CamomillaComune.html>

Fitoterapy: Vademécum de Prescripcion

<http://www.fitoterapia.net/vademecum/indexp.html>

Medicinal Plants of Ceará

<http://umbuzeiro.cnip.org.br/db/medic/vernac.shtml>

Centro Nordestino de Informações sobre Plantas - Banco de Dados de Plantas do Nordeste (BD/PN)

<http://www.cnip.org.br/bdpn/index.php>

On-line Bibliographycal Resources (Prof. Francisco José de Abreu)

[http://gmr.landfood.unimelb.edu.au/Plantnames/Sorting/Bibliography_Electr
on.html](http://gmr.landfood.unimelb.edu.au/Plantnames/Sorting/Bibliography_Electr
on.html)

Biblioteca Chico Mendes

<http://www.chicomendes.marinter.com.br/bbfitq.htm>

10. The Role of Mediumnity in the Advance of Science

The great repository of wisdom lies in Space, not on Earth. (Christian Rationalism, available at <http://www.christian-rationalism.org/ebooks/christian-rationalism.pdf>)

By not believing in the existence of incorporeal life and even disdaining everything that is related to the spiritism, scientists have paid few or no attention to the mediumnity phenomenon. Although this is lamentable, it is known that this gap will only be filled with the progressive spiritual development of the humanity.

Ironically, however, many of the ideas that some of them have when investigating a scientific topic and many of the knowledge that they are based on were acquired through mediumnity.

Among several existing mediumistic modalities, the most common is the intuitive mediumnity. All human beings have it, but each individual presents a different sensibility. This difference occurs because this spiritual attribute can be lapidated in each incarnation to obtain a higher level of evolution.

The advanced progress of the modern technology wouldn't be known if, little by little, part of them were not transmitted to the human beings through intuition (popularly known as the sixth sense).

Using the power of thought and knowing how to concentrate on a certain issue with the purpose and the effort of studying it in detail, seeking its interpretation, formulating hypothesis and conceiving ideas, are exercises commonly done by intellectuals of many knowledge areas, such as scientists, writers, inventors, etc.

Nevertheless, only a relatively small portion of this community – the so-called “visionaries” – is capable of having really innovative ideas. This people have a very developed mediumistic sensibility and, because of that, are capable of captivate such ideas from the superior space through intuition.

The authors of books and scientific fiction movies have always been characterized by their ability to predict technological advances and social consequences these advances may produce.

In their books, they have predicted, for example, the trip to the moon (Julio Verne), the fax machines (Julio Verne), the atomic submarines (the Nautilus, of Julio Verne), the robots (Isaac Asimov), the communication satellites (Arthur Clarke), and hundreds of equipments that are now part of our quotidian lives.

What should we say about the predictions the British writer George Orwell made in his book *1984*, when describing with much detail the terrifying facts we are facing lately?

Other interesting facts we want to point out are some cases where the ideas of a visionary transform, later on, into the accomplishment of another, making us thinking about the possibility that the accomplisher of this idea might be a reincarnation of the same spirit that idealized it.

The visionaries – who some people depreciatively call “utopist” or “day-dreamers” – are considered eccentric people by society and they feel they don't belong to it. It is

common that this deep feeling of not belonging also includes their own familiar environment.

And, as it happens with people who live far beyond their time, becoming different from the majority, they are isolated, stigmatized as ridiculous and even pursued by their coworkers and by the community where they live. For them, the visionary represents a treat; however, what everybody feels is envy of their courage and the fertile and brilliant mind they possess.

This fact is described in a simple, but unquestionable way, in the book *Jonathan Livingston Seagull*, by the American writer Richard Bach. The author narrates, in this book, the life of a gull that, by wanting to reach higher flights, instead of simply search for fish to eat, as other gulls do, it is impiously expelled from its flock.

Most of the visionaries have always to face the disdainful skepticism and the inflexible opposition of mediocre people, because the spirits that until recently had incarnated on Earth had a very limited evolution. And, for them, living together with individuals with a visionary profile was always a big inconvenience.

Nevertheless, the Earth Planet, as everything in the Universe, is evolving, and much more evolved spirits, that better accept the visionaries, are incarnating on it, because they see on them characteristics that the own evolved spirits, possess.

This could explain, for example, the success that Einstein (one of the recent greatest visionaries) had among the young people, because it was him who taught, through his example, the importance of daring to think beyond the conventional.

Because the nature doesn't jump, all this evolution processes that Earth is passing through have been processed slowly, so the mediocre people are still predominating (and commanding).

The following phrases can give a good idea of how people without vision face important innovations.

"But what...is it good for?" (IBM Engineer commenting on the microchips, 1968)

"There is no reason anyone would want a computer in their home" (Ken Olson, President, Chairman, and Founder of Digital Equipment Corporation, 1977)

"The wireless music box has no imaginable commercial value." (David Sarnoff's Associates in response to his urgings for investment in radio in the 1920s)

"Drill for oil? You mean drill into the ground to try and find oil? You're crazy." (Drillers who Edwin L. Drake tried to enlist to his project to drill for oil in 1859)

"This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us." (Western Union internal memo, 1876)

"Louis Pasteur's theory of germs is ridiculous fiction". (Pierre Pacht, Professor of Physiology at Toulouse, 1872)

In order to prosper, the individual must know how to take advantage of opportunities that appear. And, thereby, it is important that he stays always alert to them and that he has the sensibility needed to recognize them, using his intuition.

New opportunities can emerge almost by chance, but they can also be detected by people who are seeking them. And this is what generally occurs with scientists.

The advances in magnetic resonance awarded the Nobel Prize of Medicine, in 2003, to the British physicist Peter Mansfield (69 years), and to the American chemist Paul C. Lauterbur, (74 years).

However, the biggest winners of these advances were the patients and the health professionals, benefited by this tool that allows obtaining images from the interior of the organism.

The discoveries of these two scientists have led to the development of equipments for nuclear magnetic resonance (NMR) images. Today, these equipments are used to make a detailed map of the interior of the organism. In the last three decades, NMR has become a routine exam, being used to study most of the organs without the need of surgery. This technique is especially valuable to the examination of the brain and spinal medulla. There are almost 60 millions studies using NMR per year, all over the world.

The merit of Lauterbur was to show that it was possible to create bi-dimensional images producing variations in a magnetic field. Mansfield's duty was to show how the signals emitted by the organism during NMR could be rapidly analyzed and transformed into an image.

It was on July 3rd, 1977, that the first magnetic resonance exam in human being happened in a machine that is now located in the museum of Smithsonian Institution in the United States, changing the course of medicine. The improvement of the first image, confusing and hard to interpret, was fast and, in the 1980s, the use of this important clinical tool was already very diffused.

In that epoch, the use of the word “tesla” became common, because the capacity of the scanners used in NMR is measured in this unit of magnetic field. However, nobody remembered the source of this word.

Nikola Tesla was the scientist responsible for the pioneer works about electromagnetism. He was born in 1856 in Croatia and died in 1943 in New York. Tesla was an eccentric person, but reunited around himself a selected group of friends, like, for example, the renowned writer Mark Twain.

When he was a child, he had a vision that one day he would be capable of using the electrical power of Niagara Falls, in the United States. When he graduated in Electrical Engineering, he decided to migrate to United States, where he intended to work with Thomas Edison, but, when he got there, he preferred to accept the job that George Westinghouse, an archrival of Edison, had offered.

Tesla was the owner of a very fertile and creative mind. His first invention was a motor that worked with alternate current. The alternate current is very practical by its versatility, because it can be changed and converted to be adapted to a great variety of situations. This doesn't happen with the continuous current described by Thomas Edison.

When it was decided to use the hydroelectric power from Niagara Falls to illuminate New York City, there was a big confront of ideas between Edison – who wanted to use continuous current – and Tesla – who defended the use of alternate current. So Edison was compelled to be defeated, because Tesla won this dispute, and the premonitory vision he had in his childhood became real.

Tesla also worked with electromagnetic waves of radiofrequencies and he was the one who really invented the radio machine; however, until today, many people still wrongly believe that Marconi invented it.

Tesla had a special ability of visualizing inventions in its final form. He had also elaborated many other ideas and concepts that only much later were accomplished. One of

them was the creation of a big stationary coil around the world, which became possible the elaboration of the artificial satellites that we have nowadays in orbit.

It was also his idea to use radio waves to locate objects in the air or in the ground. Today, this is called “radar” and, when this same principle is used to completely scrutinize the human body, it receives the name of “magnetic resonance”. Another idea of him was to use special gases to fill the bulb of lamps, which, later on, became possible, the development of fluorescent illumination.

During his life, Tesla was able to patent more than 100 electromagnetic machines, but, while he was planning to produce a radio machine for long distances (short waves), he was suppressed in this entrepreneurship by Marconi, who used the knowledge that Tesla himself had taught him.

In that occasion, Tesla also lost an important financial support that he was receiving to finance his researches, and his name, little by little, fell to complete ostracism.

Tesla was always an idealist. It can be demonstrated in his quote:

Science is but a perversion of itself unless it has as its ultimate goal the betterment of humanity.

However, like many genius of science, he didn't know how to deal with the practical side of life and, when he died, he was in misery.

Unfortunately, the unfair way of how the world had treated him, persisted even after his death. So, although the American Supreme Court decided to remove the patent of the invention of the radio from Marconi and give it to Tesla, in most of the books, this is still credited to Marconi. Similar fact also happens with the alternated electrical power, whose invention is still frequently wrongly credited to Edison.

There is a small Statue of Tesla in the electric power generator of Niagara Falls. During the night, by purpose, it is not illuminated to show everybody that he was the “forgotten father of technology”.

The history of Nikola Tesla clearly shows that this visionary person was endowed with a very developed mediumistic faculty. We can infer this from both the premonitory vision he had when he was a child, and also from his extraordinary capacity of visualizing ideas that was executed later.

At a certain time, when he was already old, Tesla did this commentary:

The present is theirs; the future, for which I have really worked, is mine.

And, once again, the great scientist made another wise prevision.

Bibliography

A VIDA for a da matéria. 21. ed. Rio de Janeiro: Centro Redentor, 1996. O pensamento: p. 35-41.

BACK, Richard. *A história de Fernão Capelo Gaivota*. Rio de Janeiro: Nórdica, 1973.

LAWRENCE JR, D.B. The Basis of Bioelectricmagnetism. *Medical Acupuncture Journal*, v. 2, p. 29-36, 1990.

MATTOS, Luiz de. *Clássicos do Racionalismo Cristão*. 2. ed. Rio de Janeiro: Centro Redentor, 2001. v. 1. Cuidemos devidamente da criança: p. 79-81. Evolução sem medo: p. 142-145.

RACIONALISMO CRISTÃO. 36. ed. Rio de Janeiro: Centro Redentor, 1986. Os fenômenos físicos e psíquicos: p. 175-179. A mediunidade: p. 183-189.

SOUZA, Luiz de. *Encontro de uma nova era*. 4. ed. Rio de Janeiro: Centro Redentor, 1977. As Oportunidades: p. 115-118.

Internet web sites

Arthur C. Clarke

<http://mitpress.mit.edu/e-books/Hal/foreword/author.html>

Isaac Asimov (1920-1992).

<http://www.kirjasto.sci.fi/asimov.htm>

Júlio Verne (1928-1905)

<http://www.ciencia-ficcion.com/autores/jverne.htm>

Nikola Tesla

<http://www.apc.net/bturner/tesla.htm>

Nikola Tesla: a short biography

<http://www.neuronet.pitt.edu/~bogdan/tesla/bio.htm>

The Life and History of George Orwell

<http://www.eng.buffalo.edu/~smf7/175/orwell.html>

The Nobel Prize in Physiology or Medicine 2003

<http://www.nobel.se/medicine/laureates/2003>