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Comitè international De Recherche et D' Etude de Facteurs de l'Ambiance Association Internationale a but scientifique. (Monit. belge,28 Aug. 1969)

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## **EDITORIAL**

Although these have been difficult years, CIFA has continued to live and carry out its scientific mission in the last eight years, particularly in the organization of COSMOS AND BIOSPHERE <a href="https://www.vglobale.it/?s=cosmos+and+biosphere">https://www.vglobale.it/?s=cosmos+and+biosphere</a>.

The beautiful web page is lost with many contents. We have sadly lost the great protagonists of CIFA the Vice President Dr Piero Faraone and Mrs Anna Piccardi who had enlivened the Milanese life of the Group remembered by Giuseppe Bonacina new Vice President of CIFA.

We had already lost the active collaboration of the Secretary General prof. Gualtiero Valeri, who had contributed to the relaunch of CIFA.

Prof. returns to the general secretariat of CIFA. Paolo Manzelli student of prof. Piccardi who recalled in the long recorded telephone conversation that you can find here <a href="https://www.iiimb.me/cifa.html">https://www.iiimb.me/cifa.html</a>.

On March 12, on the occasion of the birth of Jacques Benveniste and the 50th anniversary of the death of Giorgio Piccardi, there will be a scientific day in Florence on the two pioneers of research on water and bioelectromagnetic interactions which were mentioned by Bonacina in his article and in second edition of the volume MY TRUTH ABOUT THE MEMORY of water, published by Macro Edizioni <a href="https://www.macrolibrarsi.it/autori/jacques\_benveniste.php">https://www.macrolibrarsi.it/autori/jacques\_benveniste.php</a>.

The scientific life of the CIFA resumes with new scientific contributions and we hope that the exploration of the frontiers opened by Piccardi and Benveniste can continue with new developments that have been impressed by the works of Giuliano Preparata, Emilio del Giudice, Allan Widom, Yogi Srivastava, Boris Vladimirsky, Vladymir Voeikov, Giuseppe Vitiello, Massimo Scalia, and many others.

The show must go one <a href="https://www.youtube.com/watch?v=CQAT5qdG8tl&list=RDCQAT5qdG8tl&start">https://www.youtube.com/watch?v=CQAT5qdG8tl&list=RDCQAT5qdG8tl&start</a> radio=1

December 2022 Vincenzo Valenzi CIFA President



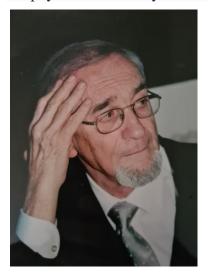
### Piero Faraone

(1931-2022)

#### CIFA Vice President

Physician, researcher, poet. For me also a friend, This was Piero Faraone, who left us in Milan on November 14, 2022.

Born in Turin on 7 October 1931, Piero graduated in Medicine and Surgery at the University of Milan and then specialized in Hygiene with a specialization in Microbiology. Medical Officer, Director of the Health Service of the Military District of Milan until 1961 when he entered service at the Hygiene and Prophylaxis Laboratory in Milan, from 1976 he was Medical Director, first of the Hygiene and Prophylaxis Laboratory of Rome and Province (now Multizonal Prevention Presidium).



Parallel to his professional activity, since 1970 Piero has carried out an original research with the so-called "differentiated sector colonies" (CSD), consisting in counting, in bacterial cultures grown in standard laboratory conditions, how many colonies they present, due to occasional and unpredictable mutations, sectors distinguished by colour, transparency, thickness, etc. The aim was to verify whether the frequency of CSDs showed, over time and on a statistical basis, periodicities referable to the periodicities of spatial variables that fluctuate incessantly and uncontrollably, such as cosmic rays, the magnetic field, the corpuscolar flux of solar origin. It therefore constitutes a "biological test" complementary to the "chemical test", based on the sedimentation of bismuth oxychloride, started in 1951 by Giorgio Piccardi (1895-1972), a Florentine scientist whom Piero met and considered a stimulus and a guide in his research.

Both tests employ a heterogeneous and out of balance colloidal system, organic in one case and inorganic in the other, which evolves into water, a solvent sensitive to the action of the changing electromagnetic and corpuscular forces acting in the ecosphere. They are relatively simple tests, but capable of promptly signaling potentially critical chemical-physical conditions for the psychophysical state of man and the functioning of technological infrastructures. In this sense Faraone and Piccardi were pioneers of the modern discipline of space weather.

Piero has participated in various international conferences and has published numerous articles and experimental research and study works. The experimentation phase on CSD was interrupted in 1991, after retirement, Piero therefore dedicated himself to the statistical analysis of the data relating to the over four million colonies examined over the course of over twenty years of research, with the contribution of specialists, such as the American Halberg, the Ukrainian Vladimirsky and the Russian Konradov. In general, short and long-term periodicities synchronous with the periodicities of some astrophysical factors were confirmed in the frequency trend of the CSDs, including the dominant eleven-year cycle of solar activity.

Vice President of Cifa (Comité International de recherche et d'étude des Facteurs de l'Ambiance) and Member of various international scientific organizations, as well as numerous articles and congress reports on CSD, Piero left us the book of poems "Stati d'animo", written over the years as evidence of affections, feelings and life experiences.

The intellectual honesty and tenacity with which Piero personally carried out "his" research are an example not to be forgotten.

Giuseppe Bonacina

#### Anna Piccardi

(1926-2022) CIFA Weaver

Anna Piccardi, the youngest of Giorgio Piccardi's three daughters, passed away in Milan on 5 October 2022. She was born in Florence on 6 May 1926. She was married to Ruffo Baldacci and mother of Chiara and Orsola.



In science, Giorgio Piccardi (1895-1972) was the creator of the "chemical test", which he performed continuously from 1951 to 1972, demonstrating the influence of some spatial phenomena (primarily the dominant eleven-year cycle of solar activity) on the evolution of heterogeneous and out of equilibrium colloidal systems. He was one of the founders of CIFA (Comité International de recherche ed d'étude de Facteurs de l'Ambiance). Although without specific chemical training, Anna has always been interested in her father's reserch, whose methods, purposes and results she knew. I can testify to this having edited with her in the 1970s the collection of hundreds of scientific works by Piccardi and the museum placement of some of his equipment.

ersonal and epistolary relationships with scientific personalities, such as Carmen Capel Boute (1914-2003) of the University of

Brussels, Alexander Tchijevsky (1897-1964) and L. Golovanov of the University of Moscow. She was also always very attentive to the activities of the CIFA.

Anna has written three books: *Il Sole oscuro* (The dark Sun), *Contrappunto'44* (Counterpoint'44), *A Usigliano sotto le stelle*... (At Usigliano under the stars...), in which the happy memories of her youth in the countryside and by the sea have the events of Italian history as a background, especially those dramas of World War II.

A secular and free spirit, with vast artistic and historical interests and courageous political and social openness, Anna was admired for her rigor and intellectual coherence.

Giuseppe Bonacina

Milan, December 2022

## Giorgio Piccardi, pioneer of space weather

The relevance of his scientific legacy 50 years after his death. The "chemical test" can be assumed can be a reliable routine index of Sun-Earth relations.

## Giuseppe Bonacina

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The year 2022 marks the 50 years of Giorgio Piccardi's death (22 December 1972). This Italian scientist carried out researches in the field of Sun-Earth relations with the original method of "chemical test", gaining international notoriety, above all in Russia, where the scientific discipline of space-Earth relations has been actively cultivated since the 1930s.



Fig. 1 - Giorgio Piccardi (1895-1972)

Piccardi was born in Florence on October 13, 1895. He graduated in Chemistry in 1921 from the Florence University, where he became Director of the Institute of Physical Chemistry (**fig. 1**).

The first part of Piccardi's scientific life was devoted to at that time innovative researches: spectroscopy (especially of rare-earths), interphase and surface phenomena etc. In 1930s his interests took a new direction after observing the inexplicable variability of the results of some chemical reaction performed in aqueous medium under the same physical conditions (temperature, pressure, but at different time. In order to ascertain that such a strange non-reproducibility had not to be attributed to experimental errors or to chance, Piccardi elaborated the concept of "fluctuating phenomena", and from 1951 developed a specific "chemical test".

#### The chemical test

Piccardi focused on the chemical reaction between a hydrochloric solution of <u>bismuth (III) chloride</u> and water, that produces the flocculation of insoluble bismuth oxychloride (basic bismuth chloride):

 $BiCl_3 + H_2O \rightarrow BiOCl \downarrow + 2HCl$ 



Fig. 2 - Execution of test P: the precipitation of BiOCl is carried out in 2 sets of 10 beakers each, one in open air and the other under a thin copper screen (see text for details).

Series of precipitations are simultaneously carried out in two different ways:

- modifying the chemical system; for example using "activated water", obtained with agitation of a mercury ball in water (test F and test D);
- modifying the external (spatial) condition; for example using a thin copper screen acting as a "Faraday cage" (test P) (fig. 2).

Referring for simplicity to the P test, a comparison is made between the precipitation rate of BiOCl simultaneously in 2 sets of 10 beakers each, one in open air and the other under a thin copper screen. The precipitation rate is measured comparing the sediment height in 10 couple of beakers of the two sets after a short time and the result is expressed as a percentage of 10 couples examined.

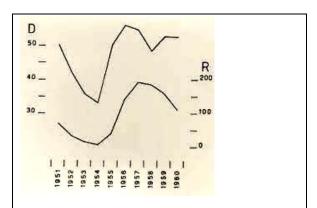


Fig. 3 - Example of correlation between chemical test results and solar activity from 1951 to 1960 (supposed by the parallelism of the two curves): D yearly results of test D (scale at the left); R yearly sunspot number (scale at the right).

The results of routine daily test carried out in Florence by Piccardi from 1951 to 1972 and at Université Libre de Bruxelles by Carmen Capel Boute (1914-2003) from 1956 to 1978 have been submitted to periodical analysis. They show a good correlation with periods of about 11 and 22 years (main sunspots cycles) and with seasonal and annual components (**fig. 3**).

Based on these results, a kind of Piccardi's law can be so formulated: heterogeneous systems out of equilibrium, if complex enough, will respond to any external signal, even of very low-energy level. Inorganic colloids in evolution, in general, are complex enough to present this property, and colloids in living organisms even more. For such systems, reproducibility is nearly impossible because there is no way to isolate them completely from the rest of the Universe: they all behave thermodynamically as "open systems" that are influenced by external factors that fluctuate incessantly.

Ine adequate methodology for experimental research has to take time into account as an irreversible coordinate bound to the conditions in the surrounding space (atmospherics, corpuscular radiation cosmic rays etc.).

#### The "solar hypothesis"

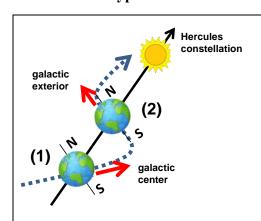


Fig. 4olar hypothesis": (1) around the spring equinox the Earth moves in its equatorial plane at the maximum speed (45 km/s) towards the galactic center; (2) around the fall equinox: the Earth moves with North Pole in front at the minimum speed (24 km/s) towards the galactic exterior.

We know that the Sun moves towards the constellation Hercules with a uniform and rectilinear motion (constant for us: 19-20 km/s) and that the Earth turns about the Sun at an approximate average speed of 30 km/s. From the combination of these two motions, one rectilinear and uniform, the other circular and roughly uniform, a helicoidal trajectory results. This is the helicoidal motion of the Earth in the Galaxy, referred to the neighboring stars. From this fact an elementary calculation or a simple graph (**fig. 4**) shows that:

- around the spring equinox (21 March) the Earth moves in its equatorial plane at the maximum speed (45 km/s) towards the galactic center;
- around the fall equinox (21 September) the Earth moves, if not along its axis, then in a direction not too far removed from that of the North Pole at the minimum speed (24 km/s). toward the galactic exterior.

The Earth is displaced with the Northern hemisphere leading, except during a small part of the month of March. In this period, and only in this period, the Earth is directed approximately, at maximum speed, towards the galactic

center, along the lines of force of a radial field and perpendicular to the lines of force of a dipolar galactic field.

If space were empty of fields of matter and inactive, a consideration of this type would be of no importance. But we know that both matter and fields exist in space. For this reason, the displacement of a body such as the Earth in one direction or another is not inconsequential. Its general physical conditions must vary in the course of a year.

The idea that the helicoidal motion of the Earth in the Galaxy brings with it a regularly recurrent modification of the Earth's general physical conditions, with a non-sinusoidal rhythm going from March to March of the next year was indicated by Piccardi as "solar hypothesis". Also this spatial condition was experienced by chemical tests.

An animated model of the helicoidal motion of the Earth in the Galaxy is shown in fig. 1.

#### A new space weather index

Piccardi's researches demonstrate that many inorganic and organic colloids in aqueous medium during their evolution are capable of responding as well as traditional physical factors that can be kept under control (temperature, pressure etc.) and to spatial factors (electromagnetic and corpuscular radiation of solar and cosmic origin) that cannot.

Some of these spatial factors are mainly produced by solar explosive events (solar storms: flare and coronal magnetic ejections) that induce massive geophysical phenomena (polar aurorae, magnetic storms etc.) and potentially dangerous effects on our technological infrastructures (satellites, radio communications, power plants etc.).

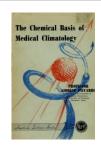




Fig. 5 - G. Piccardi: *The Chemical Basis of Medical Climatology*: U.S. edition, 1962; Russian edition: Пиккарди ДЖ., *Химические оснвы медициской климатологии*, 1967

Therefore, Piccardi,s chemical test, based on the evolution of a very sensible colloid, can serve as a routine revealer of spatial conditions, especially those of solar origin. In this sense, Piccardi may be considered a pioneer of the space weather, a relatively new scientific discipline that considers, on theoretical and practical basis, the terrestrial effects of ever changing spatial conditions.

Finally, it is worth remembering the close collaboration of Piccardi in the 1960s with many Russian scientists operating in the same field, in particular with Alexander Tchijevsky (А.Л. Чижевский) (1897-1964). The book of Piccardi *The Chemical Basis of Medical Climatology* published in Usa in 1962 was translated into Russian in 1967 (**fig. 5**). The name of Piccardi is also often cited in books and articles of Russian authors, as B.M. Vladimirsk (Б.М Владимирский).

It is hoped that the name of Gorgio Piccardi will not forgotten.

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# ON STORM GLASS AND THE METEOROLOGY

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Frequent and serious environmental disasters and catastrophes are the most important events that characterize the modern life mainly due to quick climatic variations. In this meteorological kind of frame, it is considered really interesting and appropriate to notify the studies and researches on Storm Glass made by Prof Giorgio Piccardi (1895-1972) at the Institute of Physics and Chemistry of the University of Florence. Actually "Storm Glass" are very well known since the days of the Alchemies, and are made up of super saturated idroalcolica solution of Camphor mixed with small quantities of nitrate and ammonium salts hermetically sealed in glass test tube at constant temperature. Still nowadays, these Storm Glass tests are extensively used to forecast the atmospheric weather conditions and consequently, really in not very appropriate way, they are named "Chemical Barometers". From chemical physic point of view, Storm Glass tests are an example of dynamic oscillating systems at equilibrium, also very well knows as Clock Reactions. In these kind of reactions, provided that the thermodynamic variables (temperature, pressure, density and so on) are maintained constant, the system is time dependable and its solubility varies producing sensible precipitate quantities ranging a lot due the influence of meteorological, electromagnetic and gravitational environmental factors.

Giorgio Piccardi mostly empirical researches on the meteorological behaviour of the Storm Glass allow to deduce that the oscillating chemical system modifies its solubility properties according to the applied electromagnetic fields. Why this phenomenon happens is still unknown until now. No theoretical model has been developed hat is really able to explain the phenomenon. So, the nature of this interaction that appears to be dependent upon the frequency of the applied electromagnetic field, is still not clear with exception to the range of very long wave lengths.

After Giorgio Piccardi studies these chemical oscillating precipitating systems have been subject to many other studies all over the world; for example, a communication on the subject has been given at the Cosmos and Biosphere Congress in Crimea in Sept. 2003 whist from summer 2003, these studies are under observations of the Meteorology Group of Prof. Palmieri, that in his lab room has detected some anomalous precipitations that remain until now without any kind of explanations or interpretations. During the first week of February of this year a new kind of precipitate has been noted in the above Storm Glass test. During the same period of time, at the

Astrophysics Observatory of Rome it has been measured an increase of road accidents just in correspondence with a pick of the solar activities, peculiarly in the 4th of February 2005. It become spontaneous to correlate this event to the analogous air crash events notified by Alexander Konradov in correspondence with anomalous magnetic solar activities as presented at the same Crimea Congress dated 2003. Contemporarely, it has been indicated and notified conscience status alterations in subject units that are normally in optimum health conditions, associated to important alterations of the cenestesys and of the performance status.

All these observations suggest and promote a paramount extension and increment of the studies on the influences of the "Cosmic Weather" on biologic systems and on the human physiopathology based upon the sector experience too.

#### **Biblio-On-Line**

Storm Glass - Ingredienti

 $: \underline{http://chemistry.about.com/library/weekly/aa072301a.htm} \; ; \; \underline{http://www.allivanmktg.com/stmglas} \; s.htm$ 

Giorgio Piccardi : <a href="http://www.cifa-icef.org/piccardi\_ita.html">http://www.cifa-icef.org/piccardi\_ita.html</a>

Reazioni Chimiche e Cosmologia: <a href="http://www.edscuola.it/archivio/lre/chimica\_e\_cosmologia.htm">http://www.edscuola.it/archivio/lre/chimica\_e\_cosmologia.htm</a>

Le tracce del tempo: http://www.ecplanet.com/canale/scienza-1/ricerche-

21/1/0/15255/it/ecplanet.rxdf

BIO-Informazione: <a href="http://www.antrocom.it/index.php?module=CalZone&view=event&eid=71">http://www.antrocom.it/index.php?module=CalZone&view=event&eid=71</a>

## **INTERVIEW MANZELLI VALENZI 16 DECEMBER 2022 ON**

BIOELETROMAGNETICA INTERACTION, GIORGIO PICCARDI, ECC.

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FOUNDED BY GIORGIO PICCARDI AND CARMEN CAPEL BOUTE

Comitè international De Recherche et D' Etude de Facteurs de l'Ambiance Association Internationale a but scientifique.

(Monit. belge, 28 Aug. 1969)

The general aim of CIFA is to organize, on international scale, interdisciplinary cooperation in the research and scientific investigation of environmental factors responsible for fluctuating phenomena in exact, natural and human sciences. In this connection CIFA is especially concerned with the development of research work putting in evidence, and possibly identifying, all factors directly or indirectly involved in fluctuating phenomena, and the systems sensitive to them. This will concern as well as applied research.

CIFA\* est la siegle social du Comite International de Rescherche ed d'etude de Facteurs de l'Ambiance).

In english is ICEF: International Committee for research and study of Environmental Factors.

The committee is a non-profit organization.

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